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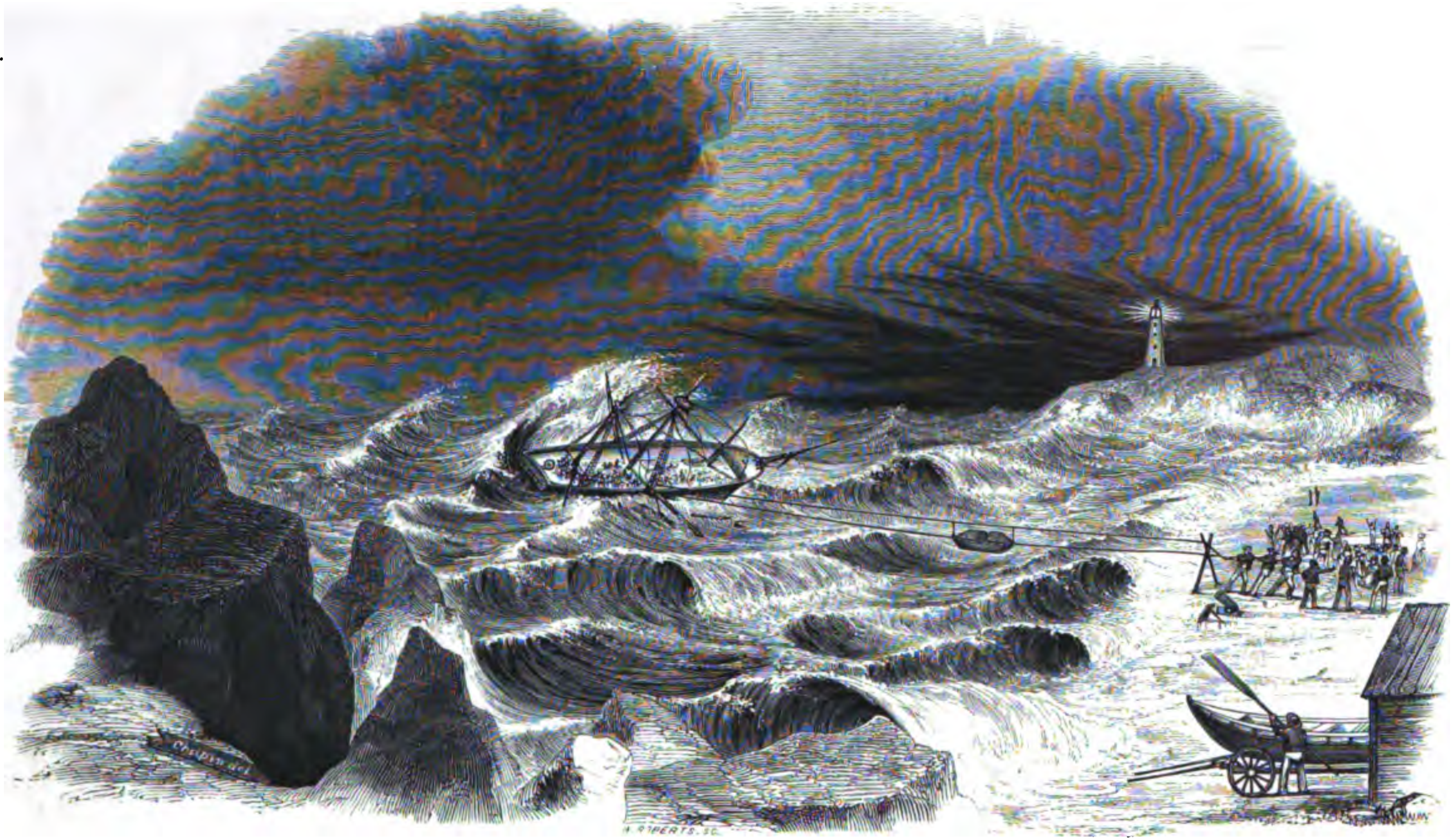

Wreck of the Ship "AYRSHIRE," on the coast of New Jersey, in a terrific snow storm, Jan. 1850. The Goverment Life Car saving 201 persons—see page 25 and 43.

FRANCIS'

METALLIC LIFE-BOAT

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FRANCIS'S LIFE-BOATS AND LIFE-CARS.

WHILST Science has her ardent votaries, Genius her brilliant scholars, and Commerce her generous advocates, the progress of the age in which we live, illumined, brightened, and exalted by the investigations of the scientific mind, fostered and encouraged by the enterprise of an active people, spreads a halo of undiminished beauty around the path of the philanthropist, and invests his pursuits with an interest which kindles within our hearts the germs of benevolence, and turns the current of our thoughts in a channel of noble and generous ambition.

Who does not feel his bosom swell with enthusiastic pride, as he contemplates the path that science has marked out:—the laws of gravitation—the mariner's compass—the Napier press—the electric telegraph—although conceived and formed by great minds, at periods remote from each other, yet forming the links of a mighty chain which was to regulate the motions of earth—steer the frail bark of commerce—circulate the news of her triumphs—and girdle the world in an instant with the thoughts of man?

Science, with renewed sagacity, points out new paths of wealth for adventurous commerce; and mankind have reaped the golden fruits of its energy and pursuits. No more in infancy—it advances with gigantic strides, and we see every portion of our happy land teeming with usefulness and intelligence, pouring in its floods of wealth to the sagacious and enterprising merchant. And yet our country has scarcely unfolded half of its hidden treasures; and while we enjoy the blessings of peace, the mountains and our verdant vallies will unfold new stores of wealth for the efforts of genius and untiring industry. The iron arms of progressive civilization stretch out upon our plains, encircle our inland seas, penetrate our hills of granite, and divide the prairies of our far western lands. The massive forms of our steamships part the waters of our distant but friendly neighbors; thousands of sails, burdened with peace offerings, make their way to other shores, while the stars and stripes of a proud, powerful and respected nation, float upon the breeze of the most distant climes.

What happy changes may not the world promise itself from the commercial spirit, now so active, if purified by good and noble impulses. Should not, and will not the moral action of this spirit be the ground-work of its future reputation? The busy pursuits of our people must, of necessity, be very engrossing, but they need not, and ought not to be so to the exclusion of those actions of benevolence and mercy which refine and elevate our nature. The great social and moral interests of our country and the world should be, with us, an abiding disposition to maintain and help them on.

The almost boundless extent of our sea-girt coast, the extensive shores of our lakes, and far stretching courses of our mighty rivers, present a field for the exercise of these noble feelings, in devising and executing plans for the preservation of human life exposed to the perils of shipwreck or disaster. There too often fatal occurrences calls aloud for the strong arm of the law to interfere for the correction of the abuses; whilst the melancholy testimony of the number of lives lost, appeals in earnest and urgent tones to the owners and agents of vessels, to furnish themselves with the means which have been provided for the security of the lives of passengers committed to their charge. With a sad heart, memory still cherishes the awful fate of those who perished by the fire of the ill-fated steamboat, *Griffith*, on one of our lakes. The *Atlantic* and *Lexington*, on the Sound—the ship *Bristol*, on our coast—the steamers *Henry Clay* and *Atlantic*, *Amazon* and *Birkenhead*, with many others which could be mentioned to fill up the painful list. The following is taken from an English journal:

STATISTICS OF DISASTERS AT SEA.—From a return ordered by the House of Commons, we gather that from Jan., 1847, to Dec., 1850, there happened at sea, upwards of 12,000 casualties, varying in magnitude, from the shipwreck in the dead of the night, with all its horrors, to a clumsy collision in the Channel, and a hasty refit in the nearest port. The annual loss of life averages 1,074, the gross number for the four years being 4,298. One of the chief features in this catalogue of disasters, is the consoling fact that but few accidents have occurred to ships ably manned and commanded. Out of the 12,000 and odd casualties, only sixty-five are recorded against ships above 700 tons.

The loss of life upon our waters, has been unfortunately much greater. Mr. Seymour, chairman of Committee on Commerce, upon introducing the bill "for the better security of the lives of passengers, &c.," into the House of Representatives, stated as a reason for its immediate passage, that during the time the bill had been pending, there had been 721 lives lost; and we are satisfied that Mr. Seymour even then told but half the truth.

Within a few hours past, the steamboat *Henry Clay*, running between Albany and New York—near the latter place—within a few hundred feet of the shore, has consigned to an untimely end, some eighty human souls. This floating palace, in one of the most crowded and busy rivers—gliding along with some four hundred persons in the enjoyment of life and pleasure—dreaming in fancied security of happy homes—of pleasant greetings of perhaps long-parted friends, and in an instant their fancied joy and smiling dreams are passed to present grief. The cry of "Fire!" strikes upon the ear, and sends the terror-stricken passengers frantically to seek refuge in the most remote portions of the ship—parents calling for their little ones—husbands for their wives—old and venerable age for help; the horrors of their situation drawn upon every lineament—the resistless, sweeping flames pressing nearer and nearer to where retreat is no longer possible—stalwart man, unused to fears, is aimless now—the agonizing cry of pain—the very prayer for mercy hushed in death, as the flames, prancing—hissing—in fury rushing—to embrace the trembling forms within their fiery grasp.

Said a gentleman who witnessed the scene just described:—"I saw a little girl: scarce eight summers had shed its warmth upon her bright and childish brow, her ringlets streaming in the air, her mild and soft blue eyes dilated and starting from their sockets with fright; the sweet and winning smile lost in the intense agony of a certain and dreadful death. She held by the hand her little brother—about four or five years old—and although the sister was acting the part of protector, yet the little fellow tried to comfort, and even spoke words of encouragement, promising that father would return. Father and mother had disappeared; their cries had been unheard and unavailing; clasping her brother in her arms, the little ones retreated as the flames pressed on, the while imploring for some helping hand; but there was none to save. They could not, had not the courage to trust themselves upon the water, and as those older, one by one, dropt from the burning wreck, leaving those two helpless ones alone to their fate, they sought refuge within the coils of a large rope, in the far stern of the boat. Poor little ones!! The very security thus sought, soon formed the ashes to cover their charred and disfigured remains. We could stand and see man, strong and powerful, struggling for life, we had almost said, without emotion; but to see these delicate and feeble little ones, as they sought the coil of rope for safety, and with their tiny hands stretched upward, and their eyes suffused with tears, forever swept from mortal sight." It was indeed a heart-rending instance, to be added to the many of this ill-fated vessel.

Scarcely had this scene closed, and friends had buried their dead, when the stillness of their homes was again broken by the telegraphic recital of yet another disaster. The steamboat *Atlantic*, on Lake Erie, had come in collision with another vessel, and amid scenes too horrible to be described, two hundred souls sank to rise no more. The head grows weary and the heart sickens at the recital of these scenes, so familiar, be it said with regret, to almost every mind.

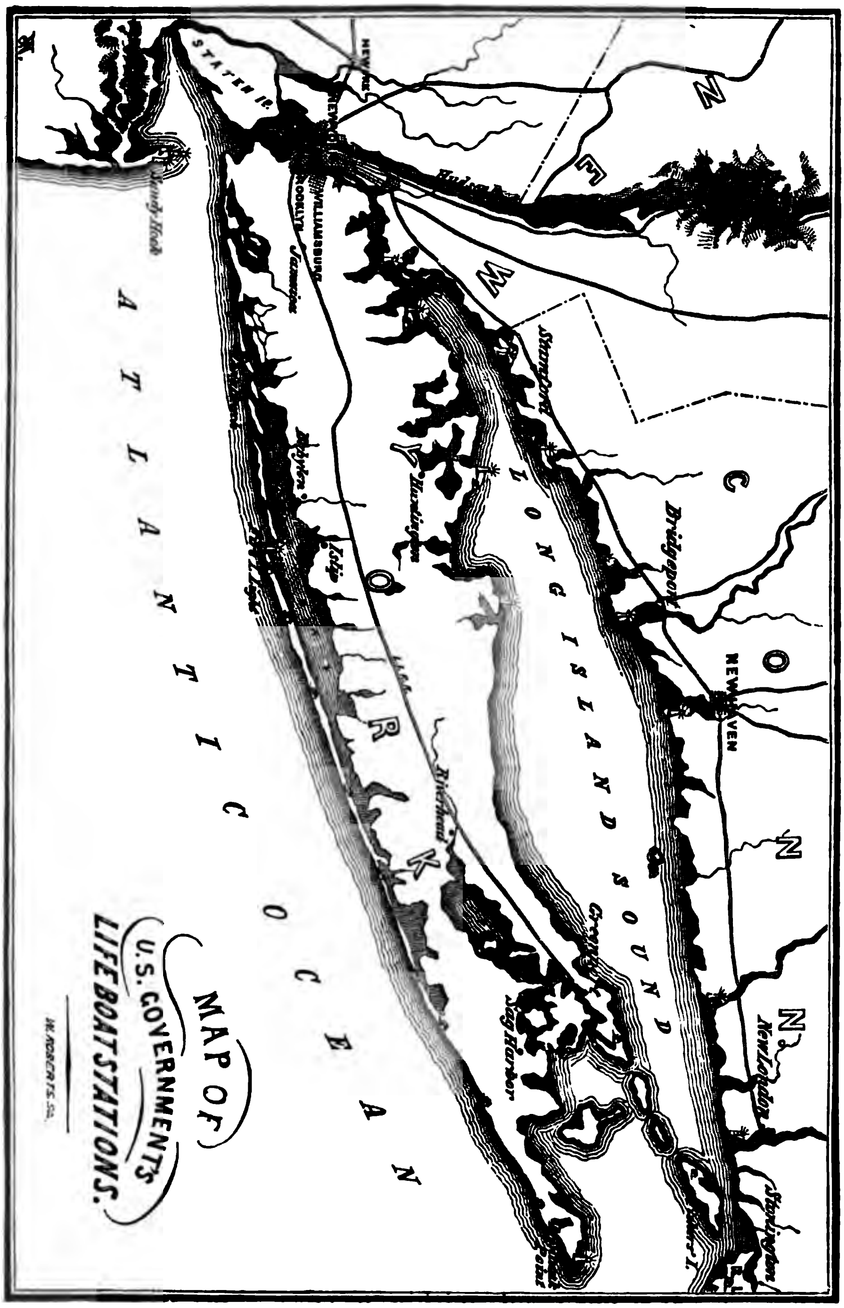
STEAMSHIP ON FIRE.

In consequence of these few, though awful, disasters here mentioned, not less than 1500 hundred human beings were hurried to another world. Perchance, reader, the recital of such scenes, but of yesterday, may bring back some painful remembrance of the death of one beloved—perhaps a father, mother, sister, or some dear friend, who found a death amongst the dashing breakers of the shore; or, worse than it, an awful grave within the charred hulk of the once proud ship. These are realities, perhaps too soon to be realized by one of us, and does it not behove each and every one to use their feeble influence in behalf of such measures as will guard against their repetition, by the use of all and every means which ingenuity, labor and philanthropy have placed within our reach?

We hope, by the introduction of a few testimonials of the value of Francis's Metallic Life-boats, and of the services performed by them, to enlist the interests of agents, but particularly of those who have a deeper interest at stake, "the preservation of their own lives."

Certainly, the Life-boat is the best and most capable of all the means of saving life, and should, therefore, be the first to claim our attention. We have many evidences of the generous and noble exertions of those who command and steer our vessels through the dark and gloomy night, whose feelings have been called into action by melancholy disasters; but too often their exertions and noble conduct have proved of no avail, because their vessels have been unsupplied with life-saving apparatus. If you would know the value of a Metallic Life-boat, refer to the letter of Capt. Lawless, and to the reports of the passengers accompanying the same, and you will see that to these Life-boats, and the courage of those who manned them, is due the immortal praise of saving 159 souls from a premature death; and yet how trifling the cost of "FIRE-PROOF LIFE-BOATS," life-preservers, and many other means of rescue, compared to the expensive furniture and gilded trappings of what, to the passengers, may become a gilded sepulchre. If competition and custom has introduced into our passenger vessels all the comforts and luxuries of a home, for the pleasure of the travelling public, does not humanity and self-interest also require that the most approved means of safety should be provided in case of accident? Something has been done by our local legislators; Government has done much; and the means of saving life from shipwrecks upon our coast is still receiving their attention.

The following outline of the action and purpose of the "Life Saving and Benevolent Association," of which Walter R. Jones, Esq., is president, provided with means of the Government specially appropriated for this purpose, will give the reader some idea of the plan which it is proposed should be carried out upon our entire coast:



Upon reference to the above map, small houses will be seen, situated upon the sound, as well as upon the Atlantic coast, and shew the situations where a Life-boat, Life-car, and all the necessary apparatus, is ready for action.

It is to be regretted that no record has been kept of the number of lives already saved by these humane and benevolent arrangements. We can confidently state, however, that not less than 2000 human beings have by these arrangements been rescued from a watery grave. Yet how much is left to be done; and we trust the Association will press forward the good work. No labor of pure philanthropy, undertaken in the right spirit, was ever allowed to languish for want of means, and it cannot be supposed that the cause of the preservation of life from shipwreck will not find a hearty support. But this only applies to our coast, and after all we look to the owners and captains of vessels for their interest in the cause, to their sound discretion and to their humanity of purpose. To them we would say, the Metallic Life-boat commends itself to their consideration for the following, among numerous other, reasons. Next to the ship the Life-boat is the only means of safety to the crew and passengers, says Captain Charles L. Moses, of the Bark Henry, in his letter to his owners, dated San Francisco, March 22, 1852.

> I am sorry to inform you of the loss of the Bark Henry. We sailed from Valparaiso on the 28th Nov. last, and when in latitude 22.47 south, longitude 151.07 west, December 31st, I struck upon a coral reef and swung to it, broadside on. In two hours my bark fell over seaward, thereby bringing her starboard side near eight feet under water; all efforts to get her off proved unavailing. At 5.30 P. M. I left the bark in one of Francis's Metallic Life-boats, taking in her my crew, thirteen in number, besides myself. Being to windward in one continual gale from S. S. E., worked that Life-boat *three hundred miles* through a very heavy sea. Indeed, too much cannot be said in praise of Francis's Metallic Life-boats. I shall consider myself under obligations to Mr. Francis as long as my life exists. I judge, &c., &c.

The Metallic Life-boat is stronger and lighter than any other, and cannot become nail-sick, worm-eaten, or water-soaked. They are unaffected by the heat of the sun, or by fire; in either case there can be no shrinkage, but can be relied on as a safe retreat in any emergency. A great loss of life has occurred from time to time in the *shrinkage* of *wooden boats*. Two such instances have occurred within a very short time; in the one case twenty-four persons, and in the other some seven or eight persons were drowned, solely in consequence of the heat of the sun having opened the seams of the boats. The necessity of having a *fire-proof boat* is fully demonstrated by reference to the burning of the steamer "Griffith," when the wooden boats were burned and thereby all hope of deliverance cut off.

The Metallic Life-boat is not liable to be broken, or its safety impaired by any violence, such as striking against the vessel or rocks, as the testimonials will satisfactorily show. Indentations may be made, and that to a considerable extent; but with a hammer, or even a stone, they may be forced out without injury to the boat; whereas the same casualty occuring to a wooden boat would be attended, in most cases, with an inevitable destruction to all on board. Instructions to repair a Metallic boat, will be found in another part of the work.

The metal boat is more economical, no repairs being required, and the first cost is no more than for a common one of wood; if the attempt be made to render it a life boat, with air chambers of sufficient capacity to sustain passengers.

We would here insert a testimonial, from one thoroughly and practically acquainted with the subject:

Charles V. Morris, U. S. N.

WASHINGTON, August, 1852.

I have been in possession of three of "Francis's Metallic Life-boats," for a length of time, and have tested them in the severest manner. They are fire-proof—worm-proof—will not corrode or rot—always tight and ready for service in every climate, and when hung to the "Davids" six months or a year, they are then ready for lowering in the water. The concussion of cannon has no effect upon them. They are superior to wooden boats in every sense—more buoyant—more economical—and cannot become water soaked.

I am, Dear Sir,
Your most ob't servant,
CHARLES V. MORRIS, U. S. N.

To JOSEPH FRANCIS, ESQ.,
New York.

Instead of continuing our remarks upon the value of the Metallic Life-boat, we would beg all those interested to refer to the testimonials: they will, no doubt, prove much more satisfactory, coming as they do from disinterested parties, while their high standing with the public, offer a guarantee to those who have not yet purchased these boats, of their true value, and of their high confidence in them. And it is certainly worthy of remark, that we are now supplying some of the lines of English

Steamers with these boats. We have also received orders from Portugal, Peru, Denmark and Sicily, the latter country having ordered a Naval Commission to examine and report upon their merits, which resulted in their adoption for their Navy. Applications have also been made by other governments, and through the agency of our own, they are now to be introduced into the Japanese Islands.

A curious instance occurred during the late war with Mexico which illustrates the almost indestructible character of these Metallic boats.

The reader is probably aware that the city of Vera Cruz is situated upon a low and sandy coast, and that the only port which exists there, is formed by a small island which lies at a little distance from the shore, and a mole or pier built out from it into the water. The island is almost wholly covered by the celebrated fortress of San Juan de Ulloa. Ships obtain something like shelter under the lee of this island and mole, and sometimes moored to iron rings set in the castle walls. At one time while the American forces were in possession of the city, an officer of the army had occasion to use a boat for some purpose of transportation from the island to the shore, he applied to the naval authorities in order to procure one; he was informed that there was no boat on the station that could be spared for such a purpose. In this dilemma the officer accidentally learned that there was an old copper life-boat lying in the water near the castle landing, dismantled, sunk and useless. The officer resolved, as a last resort, to examine this wreck, in hopes to find that it might possibly be raised and repaired.

He found that the boat was lying in the water and half filled with rocks and masses of old iron, which had been thrown into her to sink and destroy her. Among the masses of iron there was a heavy bar, which had been used apparently in the attempt to punch holes in the boat, by those who had undertaken to sink her. These attempts had been generally fruitless, the blows having only made indentations in the copper, on account of the yielding nature of the metal. In one place, however, in the bottomof the boat, the work had been done effectually, for five large holes were discovered there, at a place where the bottom of the boat rested upon the rocks, so as to furnish such points of resistance below as prevented the copper from yield- to the blows.

The officer set his men at work to attempt to repair the damage. They first took out the sand and stones and iron with which the boat was encumbered, and then raising her, they dragged her up out of the water to the landing. Here the men lifted her up upon her side, and began to beat back the indentations which had been made in the metal, by holding a heavy sledge-hammer on the inside, to serve as an anvil, and then striking with a hand hammer upon the protuberances on the outside. In the same manner they beat back the burrs or protrusions formed where the holes had been punched through the bottom of the boat; and they found, much to their satisfaction, that when the metal was thus brought back into its place, the holes were closed again, and the boat became whole and tight as before.

When this work was done, the men put the boat back again in her proper position, replaced and fastened the seats, and then launched her into the water. They found her staunch and tight, and seemingly good as new. The whole work of repairing her did not occupy more than one hour—much less time, the officer thought, than had been spent in the attempt to destroy her.

The boat thus restored was immediately put to service, and she performed the work required of her admirably well. She was often out on the open sea in very rough weather, but always rode over the billows in safety, and in the end proved to be the strongest, swiftest, and safest boat in the gulf squadron.

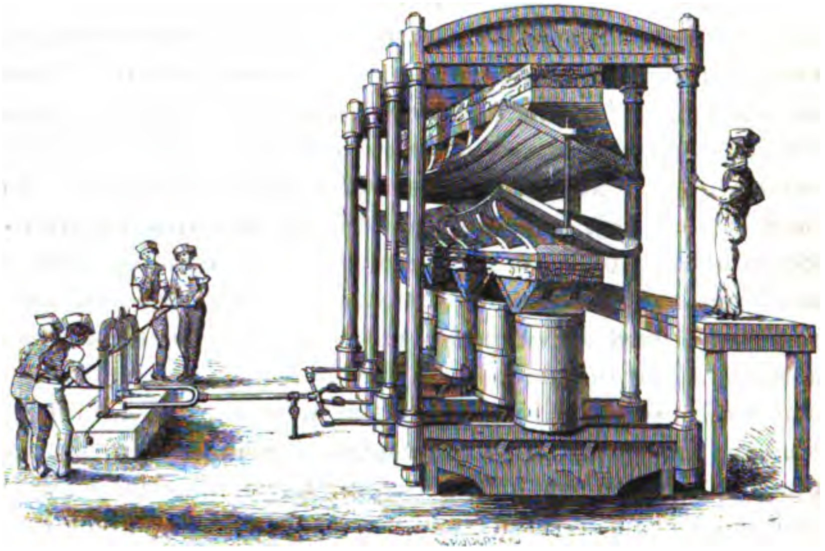
Very heavy expense has attended the perfection of the machinery and manufacture of the Metallic Life-boat and Life-car, and although this is a matter in which the proprietors alone are concerned, still, when an improvement is made, which has for its object the preservation of life, should it not be duly appreciated by those whose safety is secured by the invention, and by every philanthropic mind?

In many cases of distress and disaster befalling ships on the coast, it is not necessary to use the Life-car, (reference to which will be made hereafter,) the state of the sea being such that it is possible to go out in a boat to furnish the necessary succor. The boats, however, which are destined to this service, must be of a peculiar construction, for no ordinary boat can live a moment in the surf which rolls in, in storms, upon shelving or rocky shores. A great many different modes have been adopted for the construction of surf boats, each liable to its own peculiar objections. The principle on which Mr. Francis relies in his life and surf boats, is to give them an extreme lightness and buoyancy, so as to keep them always upon the top of the sea. Formerly, it was expected that a boat in such a service must necessarily take in great quantities of water, and the object of all the contrivances for securing its safety was to expel the water after it was admitted. In the plan now adopted, the design is to exclude the water altogether, by making the structure so light, and forming it on such a model, that it shall always rise above the wave, and thus glide safely over it. This result is obtained partly by means of the model of the boat, and partly by the lightness of the material of which it is composed. The reader may perhaps be surprised to hear after this, that the material used for this purpose is *iron.*

Iron, or copper—which, in this respect, possesses the same properties as iron—though absolutely heavier than wood, is in fact much lighter as a material for the construction of receptacles of all kinds, on account of its great strength and tenacity, which allows of its being used in plates so thin that the quantity of the material employed is diminished much more than the specific gravity is increased by using the metal. There has been, hitherto, a great practical difficulty in the way of using iron for such a purpose, namely: that of giving to these metal plates a sufficient stiffness. A sheet of tin, for example, though stronger than a board—that is, requiring a greater force to break or rupture it—is still very flexible, while the board is stiff. In other words, in the case of a thin plate of metal, the parts yield readily to any slight force, so far as to bend under the pressure, but it requires a very great force to separate them entirely; whereas, in the case of wood, the slight force is at first resisted, but on a moderate increase of it, the structure breaks down altogether. The great thing to be desired, therefore, in a material for the construction of boats, is to secure the stiffness of the wood in conjunction with the thinness and tenacity of iron. This object is attained in the manufacture of Mr. Francis's boats, by *plaiting* or *corrugating* the sheets of metal of which the sides of the boat are to be made. A familiar illustration of the principle on which this stiffening is effected, is furnished by the common table waiter, which is made usually of a thin plate of tinned iron, stiffened by being turned up at the edges all around, the upturned part serving, also, at the same time, the purpose of forming a margin.

The plaitings or corrugations of the metal in these iron boats, pass along the sheets in lines, instead of being, as in the case of the waiter, confined to the margin. The lines which they form can be seen in the drawing of the surf boat, given on a previous page. The idea of thus corrugating or plaiting the metal, was a very simple one; the main difficulty in the invention came, after getting the idea, in devising the ways and means by which such a corrugation could be made. It is a curious circumstance in the history of modern inventions, that it often requires much more ingenuity and effort to contrive a way to make the article when invented, than it did to invent the article itself. It was, for instance, much easier, doubtless, to invent pins, than to invent the machinery for *making* pins.

The machinery for making the corrugations in the sides of these metallic boats, consists of a hydraulic press and a set of enormous dies. These dies are grooved to fit each other, and shut together; and the plate of iron which is to be corrugated, being placed between them, is pressed into the requisite form, with all the force of the hydraulic piston—the greatest force, altogether, that is ever employed in the service of man.



THE HYDRAULIC PRESS.

The machinery referred to will be easily understood by the above engraving. On the left are the pumps, worked, as represented in the engraving, by four men, though more are often required. By alternately raising and depressing the break or handle, they work two small but very solid pistons, which play within cylinders of corresponding bore, in the manner of any common forcing pump.

By means of these pistons the water is driven, in small quantities, but with prodigious force, along through the horizontal tube seen passing across, in the middle of the picture, from the forcing-pump to the great cylinders on the right hand. Here the water presses upward upon the under surfaces of the pistons working within the great cylinders, with a force proportioned to the ratio of the area of those pistons compared with that of one of the pistons in the pump. Now the piston in the force-pump is about one inch in diameter. Those in the great cylinders are about twelve inches in diameter, and as there are four of the great cylinders, the ratio is as 1 to 576.* This is a great multiplication, and it is found that the force which the men can exert upon the piston within the small cylinder, by the aid of the long lever with which they work it, is so great, that when multiplied by 576, as it is by being expanded over the surface of the large pistons, an upward pressure results of about *eight hundred tons. This is a force ten times as great in intensity as that exerted by steam in the most powerful sea-going engines.* It would be sufficient to lift a block of granite five or six feet square at the base, and as high as the Bunker Hill Monument.

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* Areas being as the squares of homologous lines, the ratio would be, mathematically expressed, $1^2 : 4 \times 12^2 = 1 : 4 \times 144 = 1 : 576$.

Superior, however, as this force is, in one point of view, to that of steam, it is very inferior to it in other respects. It is great, so to speak, in intensity, but it is very small in extent and amount. It is capable indeed of lifting a very great weight, but it can raise it only an exceedingly little way. Were the force of such an engine to be brought into action beneath such a block of granite as we have described, the enormous burden would rise, but it would rise by a motion almost inconceivably slow, and after going up perhaps as high as the thickness of a sheet of paper, the force would be spent, and no further effect would be produced without a new exertion of the motive power. In other words, the whole amount of the force of a hydraulic engine, vastly concentrated as it is, and irresistible within the narrow limits within which it works, is but the force of four or five men after all; while the power of the engines of a Collins' steamer, is equal to that of four or five thousand men. The steam-engine can do an abundance of great work; while, on the other hand, what the hydraulic press can do is very little in amount, and only great in view of its concentrated intensity.

Hydraulic presses are consequently very often used, in such cases and for such purposes as require a great force within very narrow limits. The indentations made by the type in printing the pages of a book or magazine, are taken out, and the sheet rendered smooth again, by hydraulic presses exerting a force of twelve hundred tons. At least such is the power of the presses used in the immense establishment of the Messrs, Harper & Brothers.

In Mr. Francis's presses, the dies between which the sheets of iron or copper are pressed are directly above the four cylinders which we have described, as will be seen by referring once more to the drawing. The upper die is fixed—being firmly attached to the top of the frame, and held securely down by the rows of iron pillars on the two sides, and by the massive iron caps called platens, which may be seen passing across at the top from pillar to pillar. These caps are held by large iron nuts, which are screwed down over the ends of the pillars above. The lower die is movable. It is attached by massive iron work to the ends of piston rods, and of course it rises when the pistons are driven upward by the pressure of the water. The plate of metal, when the dies approach each other, is bent and drawn into the intended shape by the force of the pressure, receiving not only the corrugations which are designed to stiffen it, but also the general shaping necessary to give it the proper form or the side, or the portion of a side, of a boat.

It is obviously necessary that these *dies* should fit each other in a very accurate manner, so as to compress the iron equally in every part. To make them fit thus exactly, massive as they are in magnitude, and irregular in form, is a work of immense labor. They are first cast as nearly as possible to the form intended, but as such castings always warp more or less in cooling, there is a great deal of fitting afterwards required to make them come rightly together. This could easily be done by machinery, if the surfaces were square or cylindrical, or if any other mathematical form to which the working of machinery could be adopted. But the curved and winding surfaces which form the hull of a boat or vessel, smooth and flowing as they are, and controlled too by established and well known laws, bid defiance to all the attempts of mere mechanical motion to follow them. The superfluous iron, therefore, of these dies must all be cut away by chisels, driven by a hammer held in the hand, and so great is the labor required to fit and smooth and polish them, that a pair of them costs many thousand dollars before they are completed and ready to fulfil their function.

The *superiority* of metallic boats, whether of copper or iron, made in the manner above described, over those of any other construction is growing every year more and more apparent. They are *more light* and more easily managed; they require far *less repair* from year to year, and are very much longer lived.

When iron is used for this purpose, a preparation is used called GALVANISED IRON. This manufacture consists of plates of iron of the requisite thickness coated on each side, first with tin and then with zinc; the tin being used as an intermediate coating to preserve the mallability of the iron. The plate presents therefore to the water only a surface of zinc, which resists all action, so that the boats thus made are subject to no species of decay. They cannot be injured or destroyed except by violence, and even violence acts at a very great disadvantage in attacking them. The stroke of a shot or a concussion of any kind, *that would split or shiver a wooden boat*, so as to damage it past repair, would only *indent*or at most perforate an iron one. And a perforation, when made, is very easily repaired, even by the navigators themselves under circumstances however unfavorable. With a smooth and heavy stone placed upon the outside for an anvil, and another used on the inside as a hammer, the protrusion is easily beaten down, the opening is closed, the continuity of surface is restored, and the damaged boat becomes, excepting perhaps in the imagination of the navigator, as good once more as ever.

Metallic boats of this character were employed by the party under Lieut. Lynch in making, some years ago, their celebrated voyage down the river Jordan to the Dead Sea. The navigation of this stream was difficult and perilous in the highest degree. The boats were subject to the severest possible tests and trials. They were impelled against rocks, they were dragged over shoals, they were swept down cataracts and cascades. There was one *wooden* boat in the little squadron, but this was *soon so strained* and battered that it could be *no longer kept afloat*, and it was abandoned. The metallic boats however lived through the whole, and finally floated in peace on the heavy waters of the Dead Sea in nearly as good a condition as when they first came from the dies.

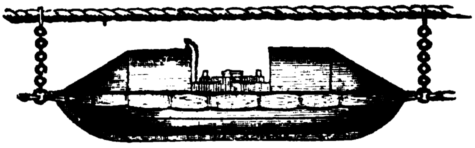
It is thus shewn, that the seams of a metallic boat will not open by exposure to the sun and rain when lying upon the deck of a ship, nor if transported from place to place, or hauled up upon a shore. Nor will such boats burn. If a ship takes fire at sea, the boats, if of iron, can never be injured by the conflagration. Nor can they be sunk, for they are provided with air chambers in various parts, each separate from the others, so that if the boat were bruised and jammed by violent concussions up to her utmost capacity of receiving injury, the shapeless mass would still float upon the sea and hold up with unconquerable buoyancy as many as could cling to her.

The surf-boats made in this way will ride safely in *any sea*, and though sometimes, after protracted storms, the surges roll in upon shelving or rocky shores with such terrific violence that it is almost impossible to get the boats off from the land, yet once they are off, they are safe, however wild the commotion. In fact, there is a certain charm in the graceful and life-like buoyancy with which they ride over the billows, and in the confidence and sense of security which they inspire in the hearts of those whom they bear, as they go bounding over the crests of the waves, while it awakens, in minds of a certain class, a high exhilaration and pleasure to go out in them upon stormy and tempestuous seas. Such statements will be found in the testimonials.

THE LIFE-CAR

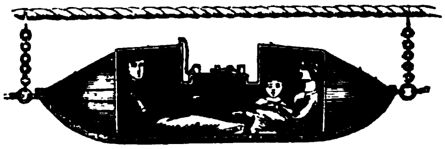
Is a sort of boat formed of copper or iron and closed over above by a convex deck, with a sort of door or hatchway through it, by which the passengers, to be conveyed in it to the shore, are admitted. The car will hold from four to five persons; when the passengers are put in, the door or rather cover is shut down and bolted to its place, and the car is then drawn to the land, suspended by rings from a hawser, which has previously been stretched from the ship to the shore.

To be shut up in this manner in so dark and gloomy a recepticle, for the purpose of being drawn, perhaps at midnight, through a surf of such terrific violence that no boat can live in it, cannot be a very agreeable alternative, but the emergencies in which the use of the Life-car is called for, are such as do not admit of hesitation or delay. There is no light within the car, and there are no openings for the admission of air. None such are in fact required, for the car itself contains air enough for the use of its passengers for a quarter of an hour, and there is rarely occupied more than a period of two or three minutes to pass it through the surf to the shore. It is subject, too, in its passage to the shore, to the most frightful shocks and concussions from the force of the breakers. The car as first made, too, was of such a form as required the passengers within it to be at length, in a recumbent position, which rendered them almost utterly helpless. The form, however, is now changed, the parts towards the ends, where the heads of the passengers would come, when placed in a sitting posture within, being made higher than the middle, and the opening or door placed in the depressed part of the centre. This arrangement is found to be much better than the former one, as it greatly facilitates the putting in of the passengers, who always require a greater or less degree of aid, and are often entirely insensible and helpless from the effects of fear, or of exposure to cold and hunger. Besides by this arrangement, those who have any strength remaining can take much more convenient and safer positions within the car in their progress to the shore than was possible under the old construction.



LIFE-CAR.

The car, as will be seen by the foregoing drawing, is suspended from the hawser by means of short chains attached to the ends of it. These chains terminate in rings above, which rings ride upon the hawser, thus allowing the car to traverse to and fro from the vessel to the shore. The car is drawn along, in making these passages, by means of lines attached to the two ends of it, one of which passes to the ship, and the other to the shore. By means of these lines, the empty car is first drawn out to the wreck by the passengers and crew, and then, when loaded, it is drawn back to the land by the people assembled there, as represented in the engraving of the title-page.

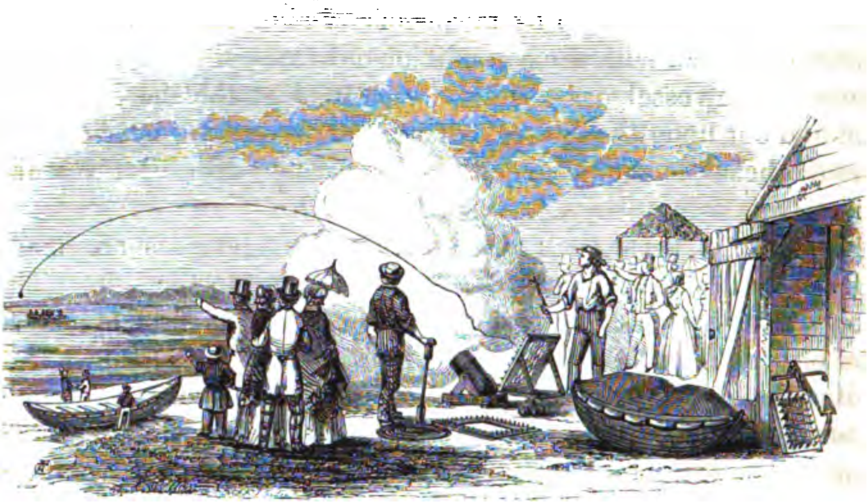


Perhaps the most important and difficult part of the operation of saving the passengers and crew in such cases, is the getting the hawser out in the first instance, so as to form a connection between the ship and the land. In fact, whenever a ship is stranded upon a coast, and people are assembled on the beach to assist the sufferers, the first thing to be done is always to "get a line ashore." On the success of the attempts made to accomplish this, all the hopes of the sufferers depend. Various methods are resorted to by the people on board the ship in order to attain this end, where there are no means at hand on the shore for effecting it. Perhaps the most common mode is to attach a small line to a cask, or to some other light and bulky substance which the surf can easily throw up upon the shore. The cask or float, whatever it may be, when attached to the line, is thrown into the water, and after being rolled and tossed hither and thither by the tumultuous waves—now advancing, now receding, and now sweeping madly around in endless gyrations,—it at length reaches a point where some adventurous wrecker on the beach can seize it and pull it upon the land. The line is then drawn in, and a hawser being attached to the other end of it by the crew of the ship, the end of the hawser itself is then drawn to the shore.

This method, however, of making a communication with the shore from a distressed vessel, simple and sure as it may seem in description, proves generally extremely difficult and uncertain in actual practice. Sometimes, and that, too, not unfrequently, when the billows are rolling in with most terrific violence upon the shore, the sea will carry nothing whatever to the land. The surges seem to pass under, and so to get beyond whatever objects lie floating upon the water, so that when a cask is thrown over to them they play beneath it, leaving it where it was, or even drive it out to sea, by not carrying it as forward on their advance as they bring it back by their recession. Even the lifeless body of the exhausted mariner, who, when his strength was gone and he could no longer cling to the rigging, fell into the sea, is not drawn to the beach, but, after surging to and fro for a short period about the vessel, it slowly disappears from view among the foam and the breakers toward the offing. In such cases, it is useless to attempt to get a line on shore from the ship by means of any aid from the sea. The cask entrusted with the commission of bearing it, is beaten back against the vessel, or is drifted uselessly along the shore ; rolling in and out upon the surges, but never approaching near enough to the beach to enable even the most daring adventurer to reach it.

In case of these life-cars, therefore, arrangements are made for sending the hawser out from the shore to the ship. The apparatus by which this is accomplished consists, first, of a piece of ordinance called a mortar, made large enough to throw a shot of about six inches in diameter ; secondly, the shot itself, which has a small iron staple set in it ; thirdly, a long line, one end of which is to be attached to the staple in the shot when the shot is thrown ; and fourthly, a rack of a peculiar construction, to serve as a reel for winding the line upon. This rack consists of a small square frame, having rows of pegs inserted along the ends and sides of it. The line is wound upon these pegs in such a manner, that as the shot is projected thro' the air, drawing the line with it, the pegs deliver the line as fast as it is required by the progress of the shot, and that with the least possible friction. Thus, the advance of the shot is unimpeded. The mortar from which the shot is fired is aimed in such a manner as to throw the missile over and beyond the ship, and thus when it falls into the water, the line attached to it comes down across the deck of the ship and is seized by the passengers and crew.

Sometimes, in consequence of the darkness of the night, the violence of the wind, and perhaps of the agitation and confusion of the scene, the first and even the second trial may not be successful in throwing the line across the wreck. The object is, however, generally attained on the second or third attempt, and then the end of the hawser is drawn out to the wreck by means of the small line which the shot had carried, and being made fast and " drawn taut," the bridge is complete on which the car is to traverse to and fro.



FIRING THE SHOT.

Reference has been made to the operations of our own government, and we would now state that Congress has already appropriated over $100,000 to establish stations along the coast of New Jersey and Long Island, as well as on other parts of the Atlantic seaboard, at which all the apparatus necessary for the service of these cars and of boats may be kept. These stations are maintained by the government, with the aid and co-operation of the Humane Society, before referred to, the object of which is to provide means for rescuing and saving persons in danger of drowning, and also of the New York Board of Underwriters, a body which, as its name imports, represents the principal Marine Insurance Companies ;—associations having a strong pecuniary interest in the saving of cargoes of merchandise, and other property endangered in shipwreck. These three parties, the Government, the Humane Society, and the Board of Underwriters, combine their efforts to establish and sustain these stations ; though we cannot here stop to explain the details of the arrangement by which this co-operation is effected. In respect to the stations, however, we will say, that it awakens very strong and very peculiar emotions to visit one of them on some lonely and desolate coast, remote from human dwellings, and to observe the arrangements and preparations that have been made in them, all quietly awaiting the dreadful emergency which is to call them into action. The traveller stands, for example, on the Southern shore of the Island of Nantucket, and after looking over the boundless ocean which stretches in that direction, without limit or shore, for thousands of miles, and upon the surf, rolling incessantly on the beach, whose smooth expanse is dotted here and there with the skeleton remains of ships that were lost in former storms, and are now half buried in the sand; he sees, at length, a hut standing upon the shore just above the reach of the water, the only human structure to be seen. He enters the hut. The surf-boat is there, resting upon its rollers, all ready to be launched, and with its oars and all its furniture and appliances complete and ready for sea. The fire-place is there, with the wood laid and matches ready for the kindling. Supplies of food and clothing are also at hand, and a compass; and on a placard conspicuously posted, are the words:

"SHIPWRECKED MARINERS REACHING THIS HUT, IN FOG OR SNOW, WILL FIND THE TOWN OF NANTUCKET TWO MILES DISTANT, DUE WEST."

It is impossible to contemplate such a spectacle as this, without feeling a strong emotion, and a new and deeper interest in the superior excellency and nobleness of efforts made by man, for saving life and diminishing suffering, in comparison with the deeds of havoc and destruction which have been so much gloried in, in ages that are passed. The Life-boat rests in its retreat, not like a ferocious beast of prey, crouching in its covert to seize and destroy its hapless victims, but like an angel of mercy, reposing upon her wings and watching for danger, that she may spring forth on the first warning, to rescue and save.

It was in the middle of January, and during a terrific snow storm, the Ship *Ayrshire*, (referred to and represented in the frontispiece) with about two hundred passengers, was driven upon the shore by the storm and lay there stranded, the sea beating over her, and a surf so heavy rolling in, as made it impossible for any boat to reach her. It happened that one of the stations which we have described was near; the people on the shore assembled, and brought out the apparatus. They fired the shot, taking aim so well that the line fell directly across the wreck. It was caught by the crew on board and the hawser hauled off. The car was then attached, and in a short time every one of the two hundred passengers, men, women, children, and even infants in their mother's arms, were brought safely through the foaming surges and landed at the station. The car which performed this service was considered as fully entitled to an honorable discharge from active duty, and it now rests in retirement and repose, though unconscious of its honors, in the factory of the "Francis' Metallic Life-boat Co.," at Green Point, Long Island.

As an instance of one of the many deeds of heroism manifested by those who have been deemed worthy of the honor of being entrusted with the almost sacred responsibility of a life-boat station, or in whom is vested the charge of the life saving apparatus, it may be interesting to notice the following:—

One dark and stormy night Mr. Richard C. Holmes, the Collector at the port of Cape May, a port situated on an exposed and dangerous part of the coast, was awakened from his sleep by the violence of the storm, and listening, he thought he could hear at intervals the distant booming of a gun, which he supposed to be a signal of distress. He arose and hastened to the shore. The night was so dark that nothing could be seen, but the report of the gun was distinctly to be heard, at brief intervals, coming apparently from a great distance in the offing.

He aroused from the neighboring houses a sufficient number of other persons to man his surf-boat, embarked on board, taking a compass for a guide, and put to sea.

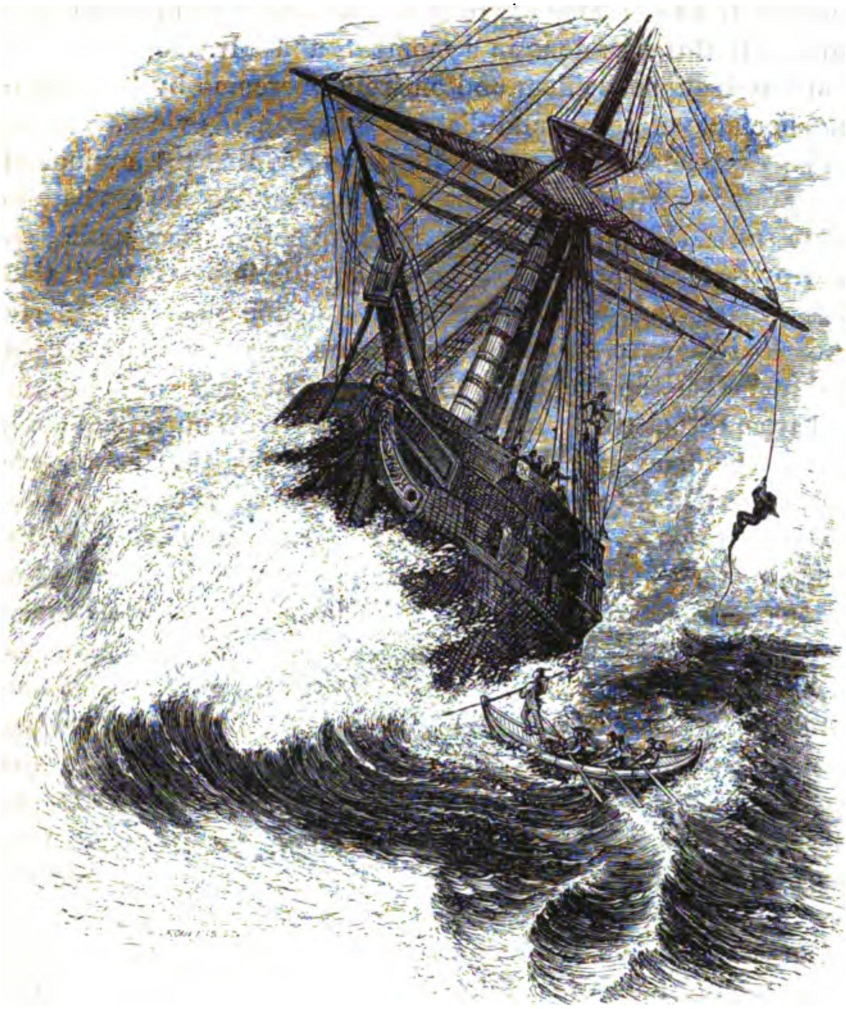
It was still so very dark, and the weather was so thick that nothing could be seen, but the crew of the boat pulled steadily on, guided only by the compass, and by the low and distant booming of the gun. They rowed in the direction of the sound, listening as they pulled; but the noise made by the winds and the waves, and the dashing of the water upon the boat and upon the oars was so loud and incessant, and the progress which they made against the heavy send of the surges was so slow, that it was for a long time doubtful whether they were advancing or not. After an hour or two, however, the sound of the gun seemed to come nearer, and at length they could see, faintly, the flash beaming out for an instant just before the report, in the midst of the driving rain and flying spray which filled the dark air before them.

Encouraged by this, the oarsmen pulled at their oars with new energy, and soon came in sight of the hull of the distressed vessel, which now began to rise before them a black and misshapen mass, scarcely distinguishable from the surrounding darkness and gloom. As they came nearer, they found that the vessel was a ship; that she had been beaten down upon her side by the sea, and was almost overwhelmed with the surges which were breaking over her. Every place upon the deck which afforded any possibility of shelter was crowded with men and women, all clinging to such supports as were within their reach, and vainly endeavoring to screen themselves from the dashing of the spray. The boat was to the leeward of the vessel, but so great was the commotion of the sea that it was not safe to approach even near enough to communicate with the people on board. After coming up among the heaving and tumbling surges as near as they dared to venture, the crew of the surf-boat found that all attempts to make their voices heard were unavailing, as their loudest shouts were wholly overpowered by the roaring of the sea, and the howling of the winds in the rigging.

Mr. Holmes gave up the attempt, and fell back again, intending to go round the windward side of the ship, in hopes to be able to communicate with the crew from that quarter. He could hear them while he was to the leeward of them, but they could not hear him; and his object in wishing to communicate with them was to give them directions in respect to what they were to do, in order to enable him to get on board.

In the meantime daylight began to appear. The position of the ship could be seen more distinctly. She lay upon a shoal, held partly by her anchor, which the crew had let go before she struck. Thus confined, she had been knocked down by the seas, and now lay thumping violently at every rising and falling of the surge, and in danger every moment of going to pieces. She was covered with human beings, who were seen clinging to her in every part, each separate group forming a sad and frightful spectacle of distress and terror.

Mr. Holmes succeeded in bringing the surf-boat so near to the ship on the windward side as to hail the crew, and he directed them to let down a line from the end of the main yard, to leeward. The main yard is a spar which lies horizontally at the head of the main-mast, and as the vessel was careened over to leeward, the end of the yard on that side would of course be depressed, and a line from it would hang down over the water, entirely clear of the vessel. The crew heard this order and let down the line. Mr. Holmes then ordered the surf-boat to be pulled away from the ship again, intending to drop to leeward once more, and there to get on board of it by means of the line. In doing this, however, the boat was assailed by the winds and waves with greater fury than ever, as if they now began to understand that it had come to rescue their victims from their power. The boat was swept so far away by this onset, that it was an hour before the oarsmen could get her back so as to approach the line. It seemed then extremely dangerous to approach it, as the end of it was flying hither and thither, whipping the surges which boiled beneath it, or whirling and curling in the air, as it was swung to and fro by the impulse of the wind, or by the swaying of the yard-arm from which it was suspended. The boat however approached the line. Mr. Holmes, when he saw it within reach, sprang forward to the bows, and after a moment's contest between an instinctive shrinking from the gigantic lash which was brandished so furiously over his head, and his efforts to reach it, he at length succeeded in seizing it. He grasped it by both hands with all his force, and the next instant the boat was swept away from beneath him by the retreating billows, and he was left *safely* dangling in the air.



CLIMBING THE ROPE.

We say safely,—for whenever any of these indomitable sea-kings, no matter in what circumstances of difficulty or danger, gets a rope that is well secured at its point of suspension, fairly within his iron gripe, we may at once dismiss all concern about his personal safety. In this case, the intrepid adventurer, when he found that the boat had surged away from beneath him and left him suspended in the air over the raging and foaming billows, felt that all danger was over. To mount the rope, hand over hand, till he gained the yard-arm; to clamber up the yard to the mast, and then descend to the deck by the shrouds, required only an *ordinary* exercise of nautical strength and courage. All this was done in a moment, and Mr. Holmes stood upon the deck speechless and entirely overcome by the appalling spectacle of terror and distress that met his view.

The crew gathered round the stranger, whom they looked upon at once as their deliverer, and listened to hear what he had to say. He informed them that the ship was grounded on a narrow reef or bar running parallel with the coast, and that there was deeper water between them and the shore. He counselled them to cut loose from the anchor, in which case he presumed that the shocks of the seas would drive the ship over the bar, and that then she would drift rapidly in upon the shore, where, when she should strike upon the beach, they could probably find means to get the passengers to the land.

This plan was decided upon. The cable was cut away by means of such instruments as came to hand. The ship was beaten over the bar, awakening, as she dashed along, new shrieks from the terrified passengers at the violence of the concussions. Once in the deep water, she moved on more smoothly, but was still driven at a fearful rate toward the land. The surf-boat accompanied her, hovering as near to her all the way as was consistent with safety. During their progress, the boat was watched by the passengers on board the ship with anxious eyes, as in her was centered all their hopes of escape from destruction.

The conformation of this part of the coast, as in many other places along the shores of the United States, presents a range of low sandy islands, lying at a little distance from the land, and separated from it by a channel of sheltered water. These islands are long and narrow, and separated from each other by inlets or openings here and there, formed, apparently, by the breaking through of the sea. The crew of our ship would have been glad to have seen some possibility of their entering through one of these inlets. The ship could not, however, be guided, but must go wherever the winds and waves chose to impel her. This was to the outer shore of one of the long narrow islands, where at length she struck again, and was again overwhelmed with breakers and spray.

After much difficulty, the seamen succeeded with the help of the surf-boat in getting a line from the ship to the shore, by means of which, one party on the land and another on board the vessel could draw the surf-boat to and fro. In this way the passengers and crew were all safely landed. When the lives were thus all safe, sails and spars were brought on shore, and then, under Mr. Holmes' directions, a great tent was constructed on the sand, which, though rude in form, was sufficient in size to shelter all the company. When all were assembled, the number of passengers saved was found to be 121. They were German emigrants of the better class, and they gathered around their intrepid deliverer, when all was over, with such overwhelming manifestations of their admiration and gratitude as wholly unmanned him. They had saved money and jewels, and such other valuables as could be carried about the person, to a large amount, and they brought everything to him, pressing him most earnestly and with many tears to take it all for having saved them from such imminent and certain destruction. He was deeply moved by these expressions of gratitude, but he would receive no reward.

THE TENT.

When the tent was completed, and the whole company were comfortably established under the shelter of it, the boat was passed to and fro again through the surf to bring provisions on shore. A party of seamen remained on board for this purpose, loading the boat at the ship and drawing it out again when unloaded on the shore. The company that were assembled under the tent, dried their clothes by fires built for the purpose there, and then made a rude breakfast from the provisions brought for them from the ship; and when thus in some degree rested and refreshed, they were all conveyed safely in boats to the main land. The hero of this adventure thus speaks of the value of the Metallic Life-boats:

CAPE MAY COURT HOUSE, *July 27th*, 1852.

Dear Sir,—I perceive Congress is about passing a law requiring all steam vessels to be properly supplied with suitable small boats for the better preservation of the lives of passengers. This is just as it should be, and I hope such a law may be established. You know the deep interest I have for a long time felt upon the subject; you know how much experience I have had in saving lives and property, and you know whether my opinion on the subject is worth much or little. Now, my dear sir, I have no doubt there will be all kinds of boats recommended, for which reason I feel considerable delicacy to say any thing upon the subject myself, lest I should be suspected of being interested. The truth no one should fear to utter, and as those who know me know much of my life has been passed in working boats instead of manufacturing them, I feel as though I have a right to recommend that kind of boat which, in my opinion, will be least likely to get out of order, and most likely to perform the part for which the law intends her. Thus much I have written as a preface; I will now state why "Francis' Metallic Life-boat" is the best adapted for ships and steamers' use, and why boats made of wood, floated by cork, gum elastic, canvas bags, &c., &c., are not the thing needed. 1st. The metal boat is not affected by the sun, she is made of a material which will not warp and crack by being kept is open weather, she is always tight, which is not the case with boats made of wood. During the time which I have acted here on the coast of New Jersey as agent for the underwriters *I do not remember to have ever found a wooden boat on board a stranded vessel which was fit to land the crew with, on to the beach, a distance usually of some* 200 *yards. I have generally found them either entirely broken up, or so leaky that they would fill before they could reach the shore.* At this moment there are two brigs within sight of me, neither of which has what I would risk my life in (the shape of a boat,) through the surf. So it generally is, and if you will examine the boats of half the ships which come into port, and half the steamers which are now running to our place from Philadelphia and New York, sometimes they have 2 or 300 persons on board, and if they were to catch on fire, they have not boats by which 40 could be saved, and unless they were near the shore, and the weather should be remarkably fine, all would be lost. These steamers, too, are much better provided with boats than you generally find them. 2d. It costs much less to keep a metal boat in order. I have now had charge of six metal boats for nearly four years; they have cost almost nothing in that time to keep them tight and fit for use. 3d. They need no house over them to keep off the sun, but can hang at the davits ready to go into the water at a moment's notice. 4th. They are less likely to be stove by concussion; they may bend but will not break. In fact they are the boats which in time will be universally used. They do not become heavy by being left in the water, but are always one thing; as they have air tanks in each end, *they will live if full of water, and carry their crew.*

I have the honor to be your friend,
RICHARD C. HOLMES,
Agent for the Phil. and New York Insurance Cos.,
On the coast of New Jersey.

HON. THOS. J. RUSK,
U. S. Senate.

We have taken the pains to describe, somewhat at length, the heroic action of Mr. Holmes in this scene of shipwreck—but there are many, very many others, the recital of whose noble deeds of daring, in like cases of disaster, would do honor to a more graphic pen than ours. We again say, READ THE TESTIMONIALS, and you will find these very persons who have, and who are contributing so largely to the cause of humanity, speak with bashfulness and diffidence of their own efforts; whilst the memory of their services in the time of need is kindly cherished and lives in the hearts of those who were saved.

TESTIMONIALS.

Memorial to Congress

By the Life-Saving Benevolent Association of New York, asking for an appropriation by that body for the saving of life from wrecked and stranded vessels on our Coast.

TO THE SENATE AND HOUSE OF REPRESENTATIVES OF THE UNITED STATES IN CONGRESS ASSEMBLED.

The memorial of the Life-Saving Benevolent Association of New York respectfully represents,

That your memorialists were chartered on the 19th of March last, wholly for charitable and benevolent objects, and its funds are solely derived from the donations of friendly disposed persons; that it has been organized; its duties are performed by officers without salaries, and its managers are chiefly merchants or persons in some way connected with commerce; that hitherto its efforts have been directed towards the saving of life from shipwrecked vessels, and vessels in distress.

That this Association acted with Mr. George Watts in recently locating on Long Island and on Fisher's Island, boat-houses, and superintending the outlay of $10,000 appropriated by Congress at the last session, with which ten houses have been built, and Metallic Boats and Life Cars and sundry other articles purchased therefor.

That in order to build one more house on Watch Hill, (near the dividing line between Connecticut and Rhode Island,) and eight more on Long Island, and to furnish them with Francis' Metallic boats, cars, carronades, hawsers, lines and other suitable articles, and also to add certain articles which are deficient in the ten already constructed, the further appropriation of the sum of $19,000 is needed, and your memorialists respectfully ask that a sufficient appropriation may be made by Congress to complete the before-mentioned facilities for saving life from wrecked and stranded vessels.

Your memorialists further represent that during the year 1838, 25,581 passengers entered the port of New York by the way of Sandy Hook from foreign ports, that the number has been increased every succeeding year, and that during the last year the number arrived, as reported at the emigration office, and other reliable sources, reached the astonishing number of 221,799, showing an increase of eight times in eleven years.

Your memorialists further represent that humanity, benevolence, and the interests of the United States, require that all suitable and proper protection, to the lives of such an immense number of persons entering this port, shall be protected.

Your memorialists further represent that within the last three months, *three* vessels have been stranded within short distance of three boat-houses, built with the funds heretofore appropriated by the liberality of the government.

The first was the steamer Eudora, bound from New York to California, with passengers, stranded near Absecum. The government Metallic Life Surf Boat near that place was most successfully used in saving both the crew and passengers in the month of November last.

The next was an emigrant ship called the Ayrshire, with 201 passengers, stranded in a snow storm on Squam Beach, on the shore of New Jersey, on the 13th of last month. The gale was so violent no open boat could approach or leave the ship. The cannonade provided by government was brought to the beach, two shots were fired with lines attached; the violence of the gale carried the first to the leeward of the ship. The second shot carried and fastened the line to the ship; with it a larger line was soon hauled off, and subsequently the Metallic Life Car was hauled through the terrific and foaming surf to the ship; in the Life-car embarked from two to four persons at a time, and with another line the loaded car was hauled to the shore, with its load of passengers tightly enclosed within it, through the surf, and safely landed.

On the first day 120 persons were landed unharmed, with one single exception, which, as the last car left the ship at night, he, an anxious passenger, jumped on the outside, contrary to orders, thinking that he could thus land in safety; unfortunately, as was foreseen, the surf immediately washed him off, and he was lost. The next morning, the remaining passengers were landed in like manner. During the time no open boat could reach or land from the ship.

More recently, the British ship Constitution, with passengers, got on shore at Moriches, and landed by the Metallic Life Boat, and the boat-house, then hardly finished, was resorted to by the wreck-master; no other shelter existed, and thus a large number of passengers, consisting partly of women and children, where sheltered from the severity of the cold, which was so intense that it is reported that a number would have probably perished had no place of shelter been provided.

Your memorialists, therefore, respectfully ask that the further sum of twenty thousand dollars may be appropriated by Congress for the purposes referred to, to be expended under the supervision of the Secretary of the Treasury, and a committee of this Association.

WALTER R. JONES,
Pres. of the Life Sav. Benevo.
Assoc. of New York.

B. MCEVERS, V. President.
ROBERT C. GOODHUE, Treasurer.
JOHN D. JONES, Secretary.

Signed by BROWN, BERTHER & Co.,
HORLAND & ASPINWALL,
BOORMANN, JOHNSTON & Co.,
A. B. NIELSON,
CHAS. H. MARSHALL,
ROBT. B. MINTURN,
SPOFFORD, TILLESTON & Co.,
MOSES H. GRINNELL,
FRANCIS SKIDDY,
HUGH MAXWELL,
D. S. KENNEDY,
And many others.

Secretary of Treasury.

Extract from the Annual Report of the Secretary of the Treasury to Congress, 1850.

"Measures have been taken promptly to execute the design of Congress in providing for the security of life and property on the sea coast. Francis' Metallic Life Boats, with the usual fixtures, designed for five points on thé coast of Florida, and three for Texas, have been contracted for.

Like facilities, with the addition of mortars, shot, rockets, and station houses, have been authorized along the shores of Long Island, including a station at Watch Hill, in Rhode Island."

The Metallic Boats referred to are to be similar to those now on the coast of New Jersey and Long Island, provided for by Congress under an appropriation in 1848.

Circular.

TREASURY DEPARTMENT, *March 8th,* 1851.

Sir,—It having been determined by the Department to substitute in future Francis' Metallic Boats for the wooden boats now in use for revenue purposes, no further repairs will be sanctioned on such boats. When the boat at your port is deemed unfit for further use, without repairs, you will so advise the department, giving the length, breadth and depth of said boat, when her place will be supplied with the metallic boat above referred to.

Very respectfully, your obdt. servt.,
THOMAS CORWIN,
Secretary of the Treasury.

To Collectors of the Customs
and Captains of the Revenue Cutters.

Letter from A. D. Bache, Supt. Coast Survey.

COAST SURVEY OFFICE,
Washington, *April* 17, 1852.

Sir,—I have the honor to present for your consideration, a report from Charles H. McBlair, U. S. Navy, Assistant in the Coast Survey, on the necessity for Life Boats in the region of the operations of his party, in the Coast Survey, including part of the coast of Massachusetts. My own views coincide entirely with those expressed by Lieut. McBlair.

Very respectfully,
Your Obdt. Servt.,
Signed, A. D. BACHE,
Superintendent of Coast Survey.

HON. THOMAS CORWIN,
Secretary of the Treasury.

Report of Lieut. Chas. H. McBlair.

COAST SURVEY OFFICE,
Washington, *April 17th*, 1852.

Sir,—I have just learned that the Hon. Secretary of the Treasury is preparing his estimates (to be presented on Monday) of the number and cost of the Francis Life Boats thought necessary along our coast.

I beg leave, in connection with this subject, to call your attention to the following several localities, where boats of this description are eminently required.

1. That part of the east coast of Massachusetts lying between Cape Cod and Monomoy Point.
2. The east coast of Nantucket Island.
3. Some points on the north side of the island of "No Man's Land."

The great stream of commerce pouring into Massachusetts Bay, converges near the first locality cited, and our N. E. storms are attended, perhaps on no part of the coast, with more frequent and terrible disasters than in this quarter. The "Humane Society of Massachusetts" have already testified their sense of the dangers of this navigation, and extended all the comfort and succor in their power to the wrecked seamen, by erecting lodges and sign posts along the shore, to shelter and direct them.

This line of coast extends between the points indicated, about thirty-three miles, and I would recommend the establishment of three boats placed at equal distances apart, as likely to be sufficient for any exigency.

Near Nantucket Island, the ocean is strewed with dangerous shoals, rendered still more formidable to the navigation by fogs and rapid currents. Every succeeding year new histories of wrecks and suffering are recorded as having taken place in the neighbourhood, and I would therefore suggest, that one boat be stationed at Leascausett, as the nearest available point to the field of danger.

The island of "No Man's Land" stands near the point of conveyance of the trade, passing into Buzzards Bay and Marthas Vineyard Sound, and traders on the passage to the Nantucket shoals, lying to the southward of the island of Marthas Vineyard.

Within eighteen months two vessels have been wrecked on the shores of "No Man's Land," in one of which every one of the crew perished. An eye witness of the more disastrous of those wrecks informed me that the inhabitants, gathered on a projecting rock, were left to gaze passively upon the dying struggles of the unfortunate crew, wasting nearly the entire day without being able to extend any aid whatever, while, had the island been furnished with a Life-boat, not a life would have been lost.

I state these facts to show the urgent necessity of providing without delay, the enterprising fishermen occupying this island with the proper means of extending relief on similar occasions hereafter.

To recapitulate, I would respectfully recommend the following Life-boats:

Three on the east coast of Massachusetts, between Cape Cod and Monomoy Point; one at Leasconsett (island of Nantucket;) one at "No Man's Land" (island.)

My recommendations on this subject are of course confined to that part of the coast lying in the neighbourhood of the survey operations of my party, and with whose wants in this respect I am thus rendered more familiar. I cannot, however, doubt that a system of Life-boats which would embrace our whole sea coast with one continuous cordon, would fulfil a most beneficient purpose, and in conducing to the safety of life and property, would only be inferior in importance to the Light Houses, Beacons, and other aids to navigation, which it is the policy of the government to establish.

Very respectfully,
Your Obdt. Servt.,
Signed, Chas. H. McBlair.
Lieut. U. S. N., Asst. C. S.

Prof. A. D. Bache,
Supt. Coast Survey, Washington.

Report of the Secretary of the Treasury.

Treasury Department,
April 20th, 1852.

Sir,—I have the honor to report that, of the appropriations of 28th and 30th September, 1850, of ten thousand dollars each, made by Congress for the locating of Life-boats on the coast of the United States, the sum of $10,000 has been expended in pursuance of the law, under the direction of the Life Saving Benevolent Association of New York, by authority of this Department, in the building of boat-houses, purchase of boats and Life-cars, and other articles for saving of life and property from shipwreck on the coast of Long Island, Fisher's Island and at Watch Hill in Rhode Island; and that of the remaining ten thousand dollars, the sum of $8,534 has been expended on portions of the coast of North Carolina, South Carolina, Georgia, Florida and Texas. The balance of the appropriation, amounting to $1,466, will be consumed in the erection of houses for the preservation of the boats and appurtenances already located.

The reports received by the Department shew that many hundred persons have been rescued from imminent peril from shipwrecked vessels, by means of these boats located at different points, a large portion, if not all of whom, would probably have perished but for the means of safety thus placed at command under the authority of Congress. Much property, that otherwise would have been lost, has also been saved through the instrumentality of these boats, and the duties accruing thereon paid to the Government.

There are numerous applications, from different points, for the location of similar boats, and many places along our extensive sea coast where they would be advantageously placed, and would, in all probability, be the means of saving many valuable lives, and much property, and the Department would, therefore, strongly urge upon the attention of Congress, the propriety of making, during the present session, a further appropriation of twenty thousand dollars for this purpose.

The Department has adopted the plan of having all the boats made of Galvanized Iron, which possesses not only the advantage of much greater durability than wood, and consequently much less expensive in point of repairs, but also that they are always in a proper state for immediate service, which would not be the case with wooden boats after laying for months in a boat-house, by which their timbers and sheathing become warped or cracked, and their seems opened.

I am, dear sir, &c.,
Tho. Corwin,
Sec'y of the Treasury.

To Hon. Linn Boyd,
Speaker House Rep.

Edwin Dennis, Wreck Master.

LONG BRANCH, N. J., *May 8th*, 1852.

MR. JOSEPH FRANCIS:

Dear Sir,—I take this opportunity to write about your "Metallic Life-boats." I have used them at wrecks, and think they are the best boats I ever saw for hard work. They are always tight and very lively in the surf. I used one at the ship "Argo," down on Long Island; also at the schooner Splendid, we took off the cargo, consisting of heavy casks of brandy and boxes of dry-goods, which we rolled into the boat anyhow, just as it happened, without any fear of breaking timbers or starting butts. *The people on the ship said we would tear the boat all to pieces, but I told them that she was all iron, and they might throw in the boxes as they saw fit and I would risk any harm. I had used them before and knew they could not make them leak.*

I have seen many cases along on our beach, when, if I had had your Metallic Life-boats, I could have saved a great many lives. It is very often the case, when a vessel strikes our shores, that she breaks up quick, and then there is no chance to get a wooden boat through the floating broken plank and timbers where there is so many spikes and bolts.

I think a great deal of these Metallic boats and Life-cars. It is the best thing that the Government ever done to place these along our coast to save life. There was a brig on shore at Long Branch, last winter, and had it not been for the Mortar and Life-car the crew would have perished.

I think the Government should appoint some good man to take care of these houses and boats, so that when the boats and rigging were used at a wreck they could be put away again, and kept in good order, which now is not always the case. At present, however, at our station, they are ready for immediate use at a moment's notice, and this should be so at all the stations.

I remain yours truly, &c.,
CAPT. EDWIN DENNIS,
Wreck Master, Long Branch, N. J.

From R. C. Holmes, Esq.

The Wreck of the Eudora.—The Metallic Surf Boat.

CAPE MAY COURT HOUSE, *Nov.* 17, 1849—11 *P. M.*

LIEUT. JOHN MCGOWAN:

Dear Friend,—I am just off the beach, Ludlam's, immediately opposite the boat-house, where there is a large steamer ashore, the Eudora, from New York, bound to California. Knowing your desire to hear how the Metallic Surf-boats work, it affords me great satisfaction to acquaint you. I landed all the passengers this day and their baggage, through a heavy northeast surf, without difficulty. My men remarked, "*It was only fun to play in the breakers with her.*" She is the finest thing I have ever seen for the purpose for which she is intended, and does the inventor great credit. I have acquainted Mr. W. R. Jones, of New York, with her performance.

I am, very truly yours, in haste,
(Signed,) R. C. HOLMES,
Collecter of Customs.

New York, *Dec.* 3, 1849.

WALTER R. JONES, ESQ.,
President of the Board of Underwriters, New York:

Dear Sir,—While landing the cargo of the steamer Eudora, ashore on Ludlam's Beach, Cape May, I had the honor to address you, though hastily, and inform you, that the crew, passengers and their baggage, had been landed through the surf with safety, in one of the Government Metallic Life Surf-boats, under my care. Permit me, now that I have more leisure, (the cargo and passengers being again back to New York,) to perform an agreeable duty to the government, Mr. Francis, the manufacturer, and Lieut. John McGowan, under whose care they were erected, and state more fully the performance of the Metallic Life Surf-boats, that they may be better known, more appreciated, and more extensively adopted along our dangerous coast.

With these boats properly managed and manned, it appears to me there can be little danger of loss of life by shipwreck. They will live in almost any surf, and it must indeed be a terrific storm when a stranded vessel can not be boarded by them. If they are not entirely proof to the waves, nothing has ever been made to outlive them.

They are strong, light, lively, and are so constructed that they will carry their crews when full of water. When kept head or stern to the sea, they cannot be filled or swamped.

Our boatmen have so much confidence in them, and consider them so entirely safe, that the difficulty of obtaining crews to man them is no longer considered.

The surf must be indeed terrible when these boats, which we now have, cannot go in safety.

In my district there are six Metallic Life-boats and six Life-cars, with houses and apparatus, all of which the government have furnished. They are about eight miles apart, and kept in constant readiness. All being of metal, are always ready for instant use. I have the honor to be, dear sir,

Truly, your Obdt. Servt.,
R. C. HOLMES,
Collector of Customs.

J. N. Schillinger.

SAG HARBOR, *May* 17*th*, 1852.

WALTER R. JONES, ESQ.,
President of the Life Saving
Benevolent Association:

Sir,—I presume you will be pleased to hear of any good service rendered by the use of the Life-boats, &c., stationed on our coast.

The brig Marcellus recently stranded at Montauk was saved by means of the Montauk Life-boat, in the following manner: The vessel lost her boats, and there being no other boats to be had, the Life-boat was used to put a gang of men on board, who landed considerable of her cargo of molasses on the beach, and then, circumstances favoring, they succeeded in heaving the vessel off; there was neither provisions nor water on board; the men were unwilling to attempt getting her in port, so the Life-boat was man'd and they were furnished with the necessary articles, (there was a tremendous sea running at the time.) Sail was made on the vessel and they got her safe into port; they took the Life-boat with them, and returned her again to the station as soon as possible, uninjured. The boat is spoken of as being a first-rate one, and were the boats provided with organized crews, it would be rare to hear of the loss of life, and much property would in consequence be saved.

Respectfully, your obdt. servt.,
(Signed,) J. N. SCHILLINGER.

Wm. R. Knight, Boarding Officer, Balize.

BALIZE BOARDING STATION, *March* 20*th*, 1852.

To JOSEPH FRANCIS, ESQ.,

Respected Sir,—Agreeable to your request, respecting the peculiarities of your splended Metallic Boat, I beg leave very respectfully to report as follows: I take particular pleasure in informing you, that after giving her a fair trial, I feel proud to say, she answers every purpose for which she was intended. She pulls, tows and sails well, and in fact she is perfectly safe, just such a boat as we stood in need of; she is far superior to either of the other boats that have been sent out here. She has been much admired by those that call themselves good judges. I take pride in informing you that she is built very much to my entire satisfaction, as I feel assured she will answer every purpose for which she was intended.

N. B. Dear sir, there is one thing I beg leave to call your particular atttention to: You have sent out 15 feet oars with the boat; the boat requires 17 feet oars, as we have a strong current of the old Mississippi to pull against; we find also that the mast and sail is also too small by one-half, but those things are nothing, as the boat's crew can very soon alter the above.

Wishing you every success,
I am truly, very respectfully,
Your obdt. servt.,
WM. R. KNIGHT,
Boarding Officer, Balize, La.

BALIZE BOARDING STATION, *May* 5*th*, 1852.

Mr. JOSEPH FRANCIS:

Respected Sir,—Yours of the 19th of April has this moment come to hand. Agreeable to your request, I have given our worthy Collector a full description of your Metallic Life-boat, and strongly recommended her to the Hon. the Secretary of the Treasury, and I have made a strong report in favor of your Metallic Surf-boat, in preference to wood boats, on this station. In justice to you I think them myself far superior to the boats we have had on this station. Previous to receiving your kind favor of the 19th of last month I had made my views known to Geo. C. Lawrason, Esq., our Collector for this port, and you may rest assured he will forward the same to the Hon. the Secretary of the Treasury at Washington. Strongly recommending your boat, I do nothing but what you are entitled to; it certainly is a very great improvement, and I hope you will be successful in all your undertakings.

Wishing you all happiness, and hope this will find you in the enjoyment of excellent health, &c., &c. I am very truly and very respectfully,

Your obedt. servt.,

Wm. R. Knight,

Boarding Officer, Balize, La.

Selah Strong.—Fire Island Light.

Fire Island, *14th April*, 1852.

Dear Sir,—I am in receipt of your favor of the 2d March, inquiring of me how your Metallic Life Boat worked in landing passengers of the "Constantine."

Immediately on discovering the wreck, I manned the boat with six oarsmen, was fortunate in procuring good men, the sea was terrific, and the least error in management would in all probability have found us all a watery grave.

I am pleased to say that the boat worked admirably, and that I consider her superior to any surf boat in existence, and will add that such is the prevailing opinion here of those who are used to the ocean.

I boarded the Minerva, wrecked off Oak Island, in 1850; many believed it impossible for us to reach the vessel, owing to the extreme roughness and heavy swell; it did appear impossible for any boat to live, yet she worked beyond our most sanguine expectations.

The principle of surf boats and station houses along our coast, is an excellent one; their present management, in detail, I deem bad; government should appoint a qualified man to take charge of each boat, with power, in extreme cases, to employ men and fairly remunerate them for services rendered.

Very truly yours,

(Signed,) Selah Strong,

Keeper Fire Island Light.

Joseph Francis, Esq.,
New York.

Simpson P. Moses.

Custom House, Dist. Puget's Sound, Olympia, Oregon,
March 13th, 1852.

Hon. Thomas Corwin,
Secy. of the Treasury:

Sir,—I deem it my duty to express my opinion of the two boats in the revenue service in this district. They are both metal boats, one copper and the other galvanized iron, constructed by Joseph Francis, Esq., New York city.

For the duties necessary to perform here, they are certainly and incomparably the very best and most suitable yet projected. To keep them in good order the cost is but trifling, whilst wooden boats, in their stead, would be very expensive.

The copper boat, in which I have been exposed to boisterous weather and a high sea, has made twelve knots per hour under one small sail. I consider her invaluable to the government, and a bargain, whatever she cost.

I am, with the highest regard,

Your most obedt. servt.,

(Signed,) Simpson P. Moses,

Collector.

John Maxen, Esq.

SQUAM BEACH, MONMOUTH COUNTY, NEW JERSEY,
WALTER R. JONES, Esq., *March* 13*th*, 1850.
President of the Board of Underwriters of New York :

Sir,—I was present, and superintended and sent the line by the mortar on board the ship "Ayrshire," on the 12th of January, 1850, and by means of the Metallic Life Car, we landed in safety her passengers, in all, *two hundred and one*, which, in my opinion, at that time, could not have been otherwise saved, as the sea was so bad that *no open boat could have lived.* We attached the line to the shot and fired it from the mortar. It fell directly across the wreck, and was caught by the crew on board, and the hawser hauled off, to which we attached the Metallic Life Car, and pulled her to and from the wreck through *a terrific foaming surf. Every soul—men, women, children, and infants—came through the surf during that cold snow-storm, dry and comfortable.* During the whole time of landing these persons, one of the *India Rubber floats* put around the cars ontside by order of the government officer who superintended, was full of water, and the other full of air, showing the ability of the Metallic Boat to do her work, even under such disadvantages as having air on one side, and the weight of water in the India Rubber float on the other, in a heavy surf.

The ship came on shore abreast of the station house, and they are ten miles apart; now, if she had struck between two houses, or even four miles from shelter, many of those we saved from drowning would have perished with cold, as it was a cold snow-storm at the time ; but, as it was, all were landed "dry and comfortable," and no one suffered, as we immediately put them in the house, where they had the benefit of the fuel provided by government, and this, in my opinion, shows the necessity of having the stations nearer together.

I have had much experience in wrecking, and was present at the wreck of the ship "John Minturn," and now say decidedly, (and many others who were present at both wrecks join with me,) that if we could have had the mortar and Metallic Life Car, we could have saved a great proportion, if not all, of the souls from the John Minturn, which was wrecked on this beach.

The car is also very valuable for landing *specie, jewels, silks and packages of all kinds*, that could not be saved by an open boat.

We can also now communicate with the ship, by means of the mortar and car, as soon as she strikes, without waiting, as heretofore, for the storm to cease, by which time she may go to pieces, and all be lost.

With the above arrangements, well attended to, there need be but few lives lost, and much less property.

Yours very respt.,
(Signed,) JOHN MAXEN,
Wreck Master.

From Capt. Benj. Downing.

Extract of a Letter from Benj. Downing, Light House Keeper, Eatons Neck, L. I.
September 11*th*, 1850.

I assure you that no person, except myself and son, left the shore in the "Government Metallic Life Surf Boat," and took a man off a wreck, named John Clark, The boat is 25 feet long, and rows six oars. I went alone with my son, because the *storm was so great that no one would go with me. Six men stood on the shore at the time.* I could not stand on the beach, old as I was, and see a man perish when I had the means to save him, and I have the reward in my own breast. I am 66 years old, and my son 16.

Had I been present with this *Life* Boat, at the dreadful calamity of the bark Elizabeth, lost on Fire Island, last month, I have the vanity to think no one need have been lost.

I have been on the water all my life, and in all kinds of vessels, from a yawl boat to a seventy-four, and could not have got off to the wreck in any other boat I ever saw.

From Capt. E. Crabtree.

Extract of a Letter from Capt. E. Crabtree, U. S. Mail Steam Ship Hermann, 19th June, 1848.

During the tremendous gale encountered by this Steam Ship, 24th March, her two Metallic Quarter Boats on the larboard side were *blown over the davits several times* before we could get them in upon deck and secure them. Had the boats been of wood, they must have been destroyed.

I was present when the stern boat of the Steam Ship Washington came in contact with a post at the Novelty Works' dock. She was twisted by the pressure at least two feet, and very much crushed. She was repaired at small expense, and now looks as well as ever. A wooden boat would have been destroyed entirely, under the same circumstances. I find the metal boat always tight and ready for use.

U. S. Mail Steam-ship Hermann, New York,
August 13th, 1850.

Having used the Metallic Life Boats made by Mr. Joseph Francis, during the whole time since she has been built, and having added two others of larger size to my number, after making several voyages I now have the pleasure to state, in addition to all former testimonials of my approval, that I still consider these boats the most effective now in use, in all situations of danger and difficulty; they are secure against fire; they do not become leaky; they are always ready for use in any exigency, and when they may be hastily and roughly used, are not injured by casualties that would either destroy wooden boats or render them useless when most needed, and I unhesitatingly recommend their use generally.

C. Crabtree,
Commander.

U. S. Mail Steam-ship Hermann, New York,
February 1st, 1851.

Sir,—I have had another opportunity of testing the superiority of your "Metallic Life Boats" over all boats made of wood.

On the 21st ult., the steamer "Prometheus," in attempting to get into the slip, ran into the stern of the "Hermann." The ship's Life Gig was hanging at the stern davits, and took the whole shock upon her broadside, breaking the gunwale and thwarts at a snap, and bending the sides of the gig almost flat together. The shock having been received by the gig entirely, the stern of the ship escaped free from damage. I sent the boat to your works, and she was soon put into her original shape, and made as good as before the collision.

Had it been a wooden boat, she would have been hardly worth repairing.

If this statement can be made of any service in bringing your Metallic Boats into general use, you are at liberty to use it.

Respectfully yours,
(Signed,) E. Crabtree,
Commander.

Joseph Francis, Esq.,
Washington City.

This boat was one of the first made, and most imperfect, and has been in constant use since the ship was built.

From J. N. Schillinger.

Extract of a Letter from J. N. Schillinger, Esq.

Sag Harbor, *May*, 1852.

The brig that recently stranded at Montauk, together with her cargo, was saved by means of your Metallic Life Surf Boat, recently sent there by the government. The boat performed admirably; the men that used her, speak in the highest terms of her sea qualities. The brig lost her boats, and had not the Metallic Boat been there, I think both vessel and cargo would have been lost; and further, a wooden boat or boats could not have stood what the iron one did.

With a well organized system of management for the Government Life Boats and apparatus, there would be but few lives lost, comparatively, and an immense amount of property saved. I think this will soon receive their attention, for the system is sadly deficient in its purpose and organization as it now stands.

To Joseph Francis, Esq.,
New York.

From Capt. G. W. Floyd.

U. S. Mail Steamship Washington,
New York, *September* 13*th*, 1850.

Mr. Joseph Francis:

Dear Sir,—The Metallic Boats furnished by you for the United States Steamship Washington, when she was built, are as good as new, and have needed no repairs. I consider the Metallic Boats superior in every respect, as they are always tight and ready for sea. In case of wreck or burning of a vessel, a tight and fire-proof boat is of vital importance, and at such times they are appreciated.

From my own experience, I can say that the Metallic Boats have the requisites of safety and durability.

Yours truly,
George W. Floyd,
Commander.

From Capt. C. Stoddart.

Extract of a letter from Capt. C. Stoddart, of the U. S. Mail Steamship, Crescent City.

September 30*th*, 1848.

I have just received the Galvanized Iron Boat which I sent you for repairs. She was crushed as she hung on the davits, by another ship coming in collision—and she now appears as good as when I purchased her. Had she been of wood, she would have been entirely ruined and beyond repair; whereas, being of metal, she was repaired in six hours at an expense of only five dollars, and made as good as new. I feel constrained to say, that the metal boats are far superior to wood, because they are always ready for use, are not affected by the heat of the sun or burning of a vessel, and are capable, far beyond boats of wood, of resisting the action of the waves, and if jammed, too, as mine was, can be repaired at trivial expense, when a wooden one, in like circumstances, would have to be replaced by a new one.

From Capt. J. Comstock.

New York, *Aug.* 26*th*, 1850.

Sir,—I am fully of opinion, that your Metallic Life-boats are invaluable to all sea-going vessels. Their great strength and buoyancy renders them available when the ordinary wooden boats would be of no service, and their lightness will allow of their being carried on ship board, where other boats could not be put. In case of fire no other boat of course is its equal, and on the score of humanity, I hope all passenger-carrying vessels will be by law compelled to carry as many of your boats as is consistent with room or space available for such purposes. When landing on rough beaches they would be available, other boats would be dashed to atoms.

Very truly yours,
Jos. J. Comstock,
Steamer Baltic.

To Mr. Francis,
Patentee of Metallic Life-boats.

From Capt. H. Windle.

U. S. Mail Steamship Cherokee.
New York, *August* 12, 1850.

I have had Mr. Joseph Francis' Metallic Life-boats on board this ship from the time she commenced running. I take pleasure in adding to other statements of my experience, that I conceive them the most *effective boats* now in use, under all circumstances of danger and difficulty. That they will go comparatively in safety through perils that would destroy wood boats, has been proved to me by the fact that a part of my crew having taken one up to the head of navigation in the Chagres River, and then set her adrift. She came down and was restored to the ship *after thumping over rocks that would have broken up a wood boat* before she could have passed through the channels in which the rocks are situated; these boats have therefore my unqualified approval.

(Signed,) H. Windle,
Commander.

From Capt. J. Comstock.

New York, *Aug. 26th*, 1850.

Hon. John Davis,
Senator, &c.

Sir,—My familiarity with numberless feats performed by Francis' Metallic Life-boats, and their perfect adaptation to be carried on ship board, warrant my saying that they are superior to every other kind of boats in present use. I hope the Honorable Committee of which you are a member, will in their judgment, enact some wholesome law in regard to the general use of this invaluable boat, the advantages of which over all others, are so great that I scarce know where to commence enumerating them.

I therefore will only say, that I am sure this is the best boat yet known for all life saving purposes.

Very respectfully, your obdt. servt.,
Jos. J. Comstock,
U. S. Mail Steamer Baltic.

Awful Collision at Sea.

Between the Steamship Southerner and Bark Isaac Mead.

New York, *October 5th*, 1850.

The Steamship *Southerner*, which arrived here last night from Charleston, ran into the bark *Isaac Mead*, from this port, bound to Savannah, yesterday morning at 2 o'clock. The latter sank immediately, and *twenty-two* souls were lost! We give the account of this terrible disaster from the *Log-book* of the *Southerner*.

On Friday, at 2 A. M., lat. 38 ° 39', sounded 22 fathoms water; relieved the wheel. In 10 minutes after, we made a sail on the larboard bow; put the helm hard aport; stopped the engine and backed strong, when we came in contract; we backed clear and stopped the engine when the vessel went down under our bow, which was in less than five minutes from the time of the collision. Hearing the cries of distress in the sea, through the exertions of the crew and passengers, we were able to man three of Francis' Metallic Life-boats, and saved seven of the crew and two passengers, out of thirty-three in all. She proved to be the bark Isaac Mead, from New York for Savannah, with a valuable cargo. She was steering S. S. W., we N. N. E.; the wind to the North, blowing strong with a sharp sea; they unfortunately put their helm to starboard to cross us, as they saw us first and took us for a vessel standing in shore. We remained until every vestige of her disappeared, and nothing was heard but the moaning of the sea.

Too much cannot be said in favor of Francis' Metallic Life-boats; had it not been for them we could not have *saved one soul of all on board; a wooden boat would have been stove to pieces in lowering or coming alongside, the sea was so bad.* To show with what facility they were got ready, in 45 minutes from the time the first boat was lowered and manned by the second officer and two of the crew, she returned with seven; the second, manned by the first officer and two of the crew, Capt. Imbbock and Capt. J. C. Berry, who nobly volunteered their services; the third, manned by Thos. Vail and the balance of the crew. When we gave up all hopes of finding any more, we turned our attention to our own damage, found that we had carried away our cut-water, bobstay and flying jib-boom, with the head-rails and some scratches on the bow.

These Metallic Boats were about the first made, and have been used by the Southerner ever since she was built. They are of small dimensions and imperfect construction compared with those of the improved kind made now. They were used without floats or fenders, or any extraneous aid, presenting an entire metal surface alone, inside and outside, for that hard service.

From Capt. M. Berry.

STEAM-SHIP SOUTHERNER, NEW YORK,
August 6th, 1850.

Sir,—When this ship was built, four years ago, I had her fitted partly with ordinary wood boats and partly with Francis' Galvanized Iron Life Boats; the wood boats have long since been given up, as they became *leaky*, *staved*, and *useless*, and have been *replaced with metal;* while the Iron Boats remain sound and useful, and are at this time being cleaned for new painting, and are found to be *as good as new*, *without ever having had any repair*, (though in that time they have been subjected to duty that would have destroyed a wood boat,) and have given me and my crew *unlimited confidence in them in the worst positions conceivable.*[*]

On one occasion of speaking another ship, in distress for provisions, *her wood boats were too leaky to float, and we were obliged to use ours to supply her.*

They cannot either sink, burn, break or remain overset; they are the only kind of boats in which unqualified confidence can be placed at all times, as they are always ready for use, and I would not now have wood boats at all. There is no comparison in the safety and durability, and above all, in the important confidence they give to the passengers and crew of a ship in dangerous situations; they are the only boats that can be depended upon in case of a steamer or wreck taking fire.

(Signed,) M. BERRY.

To Hon. JOHN DAVIS,
U. St. Senate, Washington, D. C.

Capt. N. L. ~~[illegible]~~ Coste

UNITED STATES REVENUE BRIG WASHINGTON,
NEW YORK, *August 8th*, 1852.

Sir,—Having used the Copper and Galvanized Iron Quarter Boats and Dingys during my last cruise for several months upon the Florida coast, it affords me great pleasure to add one to the many testimonials you have already received, setting forth their advantages under all circumstances.

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[*] These were the same Metallic Boats used so successfully at the COLLISION AT SEA BETWEEN THE "SOUTHERNER" AND THE "ISAAC MEAD," Oct. 6th, 1850.

They are not injured by exposure to the sun. The worm, so destructive to wood, is foiled; it is almost impossible to bilge them, and if they should be, are so easily repaired; they pull well, are good sea boats, very buoyant, kept in order at a less expense, requiring less paint; are not injured by the concussion of heavy guns; such are among the many advantages which make them superior to wooden boats.

The last boat you built for the cutter cannot be surpassed in speed, nor are her qualities as a sea boat excelled by any wooden boat of her size and class.

As life-boats they would be of incalculable value against the many accidents which occur to steamers upon our rivers, resulting in the loss of so many lives. Your small sized boats being very light, enabling two persons to pick them up and throw them overboard, capable of sustaining eight or ten persons each, are the kind that I should recommend to be placed on board of every passenger steamer, say twenty-five of these boats, disposed about the decks, occupying so little room, and procured at so trifling an expense, is a matter worthy of consideration, and should not be overlooked. They should be placed on board steamers as a means of safety against fire and other accidents. I am, very resp't'ly, Your obedt. servt.,

N. L. Carter,
Capt. Revenue Cutter Service.

Josh. Francis, Esq.,
New York.

Wreck of the Schooner A. R. Taft.

May 6th, 1850.

As soon as information of her perilous position was known, several smacks and a pilot boat went out to her assistance, but the sea was so rough that they found it impossible to approach near enough to rescue the crew. Capt. Magee, of the steamer Nina, got his boat under way at about 5 P. M., and went to her aid, and having one of Francis' Metallic Boats on board, launched her, and by his great exertions took off the captain and the crew, and brought them to the city between 8 and 9 o'clock last evening. Great credit is due to Captain Magee for his exertions. He proceeded on his own accord to the assistance of the distressed mariners, and had it not been for his promptitude, and the fact of having attached to his steamer the Metallic Life Boats, mentioned, there is great doubt whether the crew of the A. R. Taft could have been saved from a watery grave.

From Messrs. Everet & Brown.

New York, *Aug. 30th*, 1852.

Mr. Joseph Francis:

Sir,—In reply to your enquiries, asking our opinion of your "Metallic Life-boats," it gives us pleasure to say that several years experience with the boats you have furnished us, of different sizes and descriptions, for our orders, and for three steamers fitted out for South America, as also for our Liverpool packets, have confirmed us in the opinion that your metallic boats are more safe, durable and economical in all climates (but particularly in the tropics) than any boats of wood or other construction within our knowledge, and much less liable to injury or expense for repairs.

We think your boats entitled to our preference, and should recommend them to our friends with confidence.

Yours, &c.,
Everett & Brown.

From D. Stuart & Son.

BALTIMORE, *August* 12*th*, 1852.

MESSRS. EVERETT & BROWN :

Dear Sir,—Your esteemed favor of 11th inst. at hand and contents duly noted.

Had it not escaped the writer's memory when in New York, he would certainly have complied with the promise made Mr. Scranton, of a certificate respecting the intrinsic worth of Francis' Life-boats.

In November, 1848, we fitted out our ship Greyhound, and for the first time substituted iron for wooden quarter boats, more as an experiment than otherwise.

After an absence of two years and upwards, the major part of the time confined to the tropics, the Greyhound returned home, and upon examination her boats were pronounced to be in good order, requiring no repairs whatever; the only repairs done to either boat during the ship's absence was to replace a portion of the gunwales and stern post of the smaller boat, which were torn from her during a collision of the Greyhound and another ship in the bay of San Francisco, and it is the writer's opinion, had an ordinary wooden boat been subjected to the same ordeal, an utter destruction of the afterpart of the boat, at least, would have ensued, as the boat was tightly jammed between the two ships. Subsequent to this, and up to the time of the ship's arrival in your city, in May last, we are not aware of any repairs having been done to either boat, and even up to this point they were in general good order, but inasmuch as the ship was about entering upon a long voyage, it was deemed advisable to replace the gunwales and row-locks by new ones.

As Surf-boats (with a slight alteration in the model, viz.: in depth of hold) the writer considers them unequalled, and would here mention that when in Pisco, on the coast of Peru, where the surf is remarkable for its violence, these boats were universally admired for their admirable performance, and upon one occasion, although the rudder was torn from the boat by the violence of the sea, and consequently at its mercy, still she went safely through and landed her passengers with scarcely a wet garment. It is the writer's decided opinion, that any ordinary wooden boat, under similar circumstances, would have capsized.

We remain, yours truly,
D. STUART & SON.

P. S. When the paint was scraped from the surface of the iron, it was found entirely free from rust, the sea water having perceptibly had no action whatever upon it.

From Capt. M. Berry.

STEAMSHIP SOUTHERNER,
NEW YORK, *Oct.* 23, 1850.

MR. J. FRANCIS:

Sir,—I send you an order for a suit of Metallic Life-boats for the new steamship "General Marion," now building for the Charleston Line.

They will be required in January.

Yours, &c.,
M. BERRY.

From Capt. Thos. S. Budd.

Extract of a Letter from Capt. Thos. S. Budd, U. S. Mail Steamship Northerner, 22d August, 1848.

Francis' Patent Galvanized Iron Life-boats have given me satisfaction. They cannot become nail sick, worm eaten, or water soaked, nor leak, however much exposed to the sun, and are of course always ready for instant use in cases of emergency. As to economy, there is no expense to keep them in repair, and for preserving life they are always ready for instant use. For all the qualities for ship boats, such as durability, economy, capacity and safety, they are far superior to wooden boats.

From Edward K. Collins, Esq.

NEW YORK, *Aug. 4th,* 1850.

Sir,—I have provided Francis' Metallic Life-boats for the "Collin's Line of Liverpool Steamships," as from my own experience they are far superior to any others in point of *Economy, Durability and Safety.*

I should think no other kind of boat could be relied on for spare boats for passengers when Steamboats are destroyed by fire. They are fire-proof and are not affected by the heat.

Yours, respectfully,
EDWARD K. COLLINS.

To HON. J. P. PHŒNIX,
Committee Commerce, Washington, D. C.

From Capt. Thos. Brownell.

Extract of a Letter from Capt. Thos. Brownell, U. S. Navy, 11th September, 1848.

These boats are always ready for use at a moment's warning, in any climate, and such as would render a wooden boat entirely useless. They can be used at sea, and lives saved, where wooden boats could not live, even if in a floating condition. The boats I have in use I have put to very severe tests.

From Report of the Judges on Naval Architecture.

Extract from the Report of the Judges on Naval Architecture, appointed by the American Institute at the 20th Annual Fair. Judges: Jacob A. Westervelt, Ship Builder; Thos. Brownell, U. S. N.; John H. Rhodes, Naval Constructor.

The Galvanized Iron Life Boats have superior advantages over all others, for the following reasons:

First.—Their endurance under severe trial, it being almost impossible to meet with sufficient injury to disable them from sustaining their complement of persons for any length of time in case of *storm, wreck* or *fire.*

Secondly.—Their extreme tightness united with great strength.

Thirdly.—Their inability to become nail sick, worm eaten, or leaky from exposure to the sun, however long they may be out of water.

Fourthly.—These Life Boats may be used at sea to preserve life when nothing else can live, or for the daily use of the ship, *being always in readiness for either service.*

From Capt. Thos. S. Budd.

NEW YORK, *October* 21*st*, 1850.

MR. J. FRANCIS:

Sir,—I herewith send you an order for a suit of Metallic Life Boats for the new steam-ship building to take the place of the Northerner.

Those ordered by me for the Northerner when she was built are yet as good as ever, having been in service ever since without repairs. I therefore renew my orders for more.

Respectfully yours,

THOS. S. BUDD.

From E. Mills, Esq.

NEW YORK, *October* 19*th*, 1850.

J. FRANCIS, Esq.:

Enclosed please find an order for your Metallic Life Boats, one set each, for the new steamers "Louisiana" and "Mexico," building for Messrs. Harris & Morgan, Gulf Line; and one set for the new steamer "Brother Jonathan," building at Williamsburg, for the Pacific.

The Metallic Boats ordered by me for the steamships "Washington" and "Hermann," when they were built, are yet as good as ever, and have required no repairs.

I am satisfied, from my own experience, that the Metallic Boat is far superior to any other in every respect.

Yours truly,

EDWARD MILLS.

From Walter R. Jones, Esq.

Extract of a Letter from Walter R. Jones, Esq., President of the Board of Underwriters, to Hon. James G. King, June 26*th*, 1850.

I am decidedly in favor of Galvanized Iron Boats; the air chambers can be sufficient in number to float all the passengers that can get in and around her sides.

The controlling advantages of the Metal Boats are, *that they do not burn*, and can always be kept tight and fit for immediate use, whereas boats built of wood are sure to leak like riddles, as they generally are placed where they are exposed to the sun and rain.

NEW YORK, *May* 6*th*, 1851.

WALTER R. JONES,

President of the Board of Underwriters of New York:

Sir,—The "Galvanized Iron Cargo Surf Boat," built by your order, for the Board of Underwriters, we received from the establishment of Mr. Francis, the 14th March, 1850, and as this is the first Metallic Boat in this service, the undersigned take the liberty to report to you her performance, strength and ability to perform the severe duty required of a Wrecking Cargo Boat.

Immediately on receiving her she was taken to the ship Argo, then ashore with a valuable cargo, on Mastic Beach, Long Island. The boat was attached to that ship until she was unloaded and got off, and was the only safe and efficient boat we had. After this she was used at other vessels ashore. She has been constantly in the hardest possible service for nearly one year.

The first service with this boat was to take on board one of the largest "Worthington Steam Pumps," together with the boiler, suction pipes, and materials, weighing three tons. She carried all these easily to the ship, through a heavy surf and blowing hard. We safely assert that no wooden boat between Egg Harbor and Savannah could have done this. In a wooden boat it would have required three trips, and not safe at that.

Cargo sufficient to load two wrecking schooners, the "Mary Eflin" and "Splendid," was taken from the Argo, consisting principally of brandy, in pipes and half pipes, and dry goods. Besides this, there were 300 burr stones, and 150 tons kintlege, also an anchor weighing 3000 lbs., which was laid on the thwarts.

Amongst the cargo taken off were four cases plate-glass, each weighing 1600 lbs.; those cases were so large we had to carry them across the gunwales, and the thwarts at the time were not secured to the boat, showing the strength of the iron side. This would have crushed a wooden boat.

We could carry in the Metallic Boat 30 pigs of kintlege, when the wooden boats could take but 15, and they split open at that. We sent from the schooner to the ship 100 oil casks, five at a time, in one hour and twenty minutes. No wooden boat could take more than three casks at once.

This Metallic boat has been subjected to the roughest and hardest possible service, and in many cases, severe abuse, and yet, in hauling her up at the "Novelty Iron Works," a few days since, her bottom was found to be PERFECT, and *needed no repairs*, and she is now as good as ever.

This Metallic Boat will take off cargo without wetting it, while the wooden boat is always leaky.

We had one wooden boat in use that cost $120; she split open twice, and was repaired at a cost of $60, and again $30, and she is now worthless.

After much experience, and constant experiment and use, we feel bound to say that there can be no comparison in value between a Metal Boat and a wooden boat, for safety of life, taking out anchors, or for discharging on a beach with a full cargo in a heavy surf, and with all this we *feel full confidence as to our own safety to go through any surf in any storm*, which we cannot feel in any wooden boat we ever saw.

JAS. H. PERRY, Engineer of Board of Underwriters,
E. C. PERRY, Engineer of Board of Underwriters,
HENRY CLOCK, Capt. of Underwriters' Sch. Parmle.

From John S. Rhea, Collector.

POINT ISABEL,
COLLECTORS' OFFICE, *June 2d*, 1852.

Sir,—I have the honor to transmit herewith, copies of certificates furnished this office on the 1st inst., by Capt. Thos. B. King, branch pilot, and Capt. Wm. Evans, master of the lighter schooner Yazoo, in relation to certain valuable services performed by Francis' Metallic Life Boat, stationed at "Brazos Island."

When the condition of the brig "Brownsville" was reported to this office, and upon the application of Capt. John Rogers, master of said vessel, the Inspector of Customs at Brazos Island was promptly instructed to place the Life Boat at his disposition.

She performed the services as stated in the certificate, and as was verbally confirmed by Capt. Rogers.

Mr. Gauge, of the Tea depot, and myself were passengers on the steam-ship Yacht when the pilot boarded her at sea by means of the Life Boat, and can attest the correctness of Capt. King's statements in that particular service.

Very respectfully,
Your obedt. servt.,
(Signed,) JOHN S. RHEA,
Collector.

To Hon. THOS. CORWIN,
Secy. of the Treasury, Washington.

From Thos. B. King, Pilot.

I, the undersigned, do hereby certify, that on Monday, the 26th of April, A. D. 1852, the steamship Yacht arrived off the Brazos bar, and that I attempted to cross the bar in the pilot-boat, and could not, for want of sufficient wind, and on account of the heavy surf running on the bar; that I returned and manned Francis' Metallic Life-boat, crossed the bar and sounded it carefully, and then boarded the steamship and brought her in safely. Had there been no Life-boat stationed here, there was no other species of open boat could have performed that service, and the steamship would have been detained outside for a smoother opportunity.

(Signed,) THOS. B. KING, Branch Pilot,
Port of Point Isabel, Texas.

To JOHN S. RHEA, Collector,
Port of Point Isabel, Texas.
June 1st, 1852.

I certify the foregoing to be a true copy.
(Signed,) JNO. P. BUTLER, Clerk.

From J. Taylor, Esq., Collector.

COLLECTOR'S OFFICE.
DISTRICT OF OKRACOKE, N. C., *Feb.* 21*st*, 1852.

Sir,—Your letter of the 6th inst., enclosing bill of lading for one of your Metallic Life-boats, was received by last mail. The boat has also arrived in safety, and is now in my possession.

The Secretary of the Treasury is entitled to all praise for ordering a boat of the kind to this place. There are but few points on our whole coast where it is more probable she may prove serviceable.

The harbour (if it can be so called) lies open to the sea, and but few vessels escape from shipwreck that may happen to be here, in one of our autumnal gales. At such a time your Life-boat may be the means of saving many lives, managed by our pilots. It is my purpose to make her useful, should an occasion offer.

Very respectfully, your obdt. servt.,
JOSHA. TAYLOR, Collector.

Mr. JOSEPH FRANCIS,
New York.

From John S. Rhea, Esq., Collector.

We, the undersigned do hereby certify, that the Francis' Metallic Life-boat, stationed at this port, was the means of saving the brig Brownsville and cargo from wreck and loss, on the 12th of April, 1852. The brig struck in crossing the bar, and the wind dying away, she was thrown on the beach of Brazos Island. The Metallic Life-boat was the *only boat* that could carry an anchor out, which service she performed through a heavy surf, carrying a nine-inch hawser at the same time. The boat received some severe knocks, thumps along side, which I believe would have disabled a wooden boat, doing no further injury than tearing the canvass of the cork fenders in one or two places.

The brig and cargo was worth at least thirty thousand dollars. We are also of opinion that this port ought to be furnished with another Metallic Life-boat, as in case of one being out of repair or suffering any serious damage, we would have the other to save life or property.

(Signed,) THOS. B. KING, Branch Pilot.
" WM. EVANS, Master Schr. Yazoo.

To JOHN S. RHEA, ESQ., Collector,
Point Isabel, Texas.

June 1st, 1852.

I made the first effort to carry an anchor with my own boat from the brig; in taking the anchor on board she filled, and failed to perform the service required.

(Signed,) WILLIAM EVANS.

Testimonial of Wreck Masters.

SAG HARBOUR, L. I., *Nov. 14th*, 1851.

MR. JOSEPH FRANCIS:

Dear Sir,—The "Metallic Life-boats" and Cars built by you and placed by government on the coast of Long Island, we think are of great value in saving life and property. As to service, wooden boats cannot compare with them. We were present and assisted in landing the passengers, their baggage, &c., from Br. Ship Henry, (stranded opposite Bridgehampton, in June last,) also in taking them and their baggage from the beach to a steamer, with the Metallic Life-boat, from Bridgehampton Station, through a heavy surf that no wooden boat could have stood; *the ship's long-boat was stove to atoms as soon as the surf broke on her.* Your boat, after being hove on the beach, by the surf, for several days, was only slightly injured, one half-hour's labor would repair all damage done to her; the galvanizing was not worn off the metal after being so often hove on the beach. In our opinion, the boats and other apparatus are well worthy to be called Life Saving; the houses have been found invaluable in sheltering those who have unfortunately been cast on our shores.

We remain respectfully,
Your obdt. serv'ts.,

(Signed,) JOHN L. COOK, Capt. of Life-boat.
ALANSON TOPPING, Wreck Master.
JAMES L. SANDFORD, Crew.
CHARLES A. LUDLOW, "
JOHN N. HEDGES, Keeper of Station.

From Captain Lawless—Wreck of the Independence.

New York, *August 12th*, 1852.

Joseph Francis, Esq.:

Dear Sir,—Enclosed please find order for two of your Metallic Life-boats, 25 feet long, 6 feet 6 in. wide for steamships "Star State," and one of same dimensions for steamship "Trinity," now building by Messrs. Westervelt & Sons, for Messrs. Harris & Morgan's gulf line of steamers.

Those that you furnished the steamship Louisiana, in 1850, are as good as new, although they had very rough usage in preserving the passengers and crew of the steamship Independence, lost on Pass Cavallo bar, in March last; let me assure you, my dear sir, that no other boats but your metallic boats would have stood the tremendous sea. The boats of the Independence being of wood were all lost together, with the mate, one man and three lady passengers. My mate, in going to the rescue, was swamped, and remained, with his men, in and on your life-boat over six hours, and finally reached the beach in safety, and he, with the same boat, was the first to reach the ill-fated ship, by which we saved 159 souls, and but for the noble performance of your boats, the loss of life would have been immense, as the ship soon went to pieces. You will see by the order that they were only 20 feet boats. I will also add, that the 20 feet life-boat, ordered by me for the steamship Meteor, in September last, was the only boat saved from that vessel, and is as good as when taken from the shop; all her wooden boats were stove to pieces. Let me return you my many thanks for the valuable service you have rendered the marine in the construction of your noble boats, and wishing you every prosperity. I remain, your obedient servant,

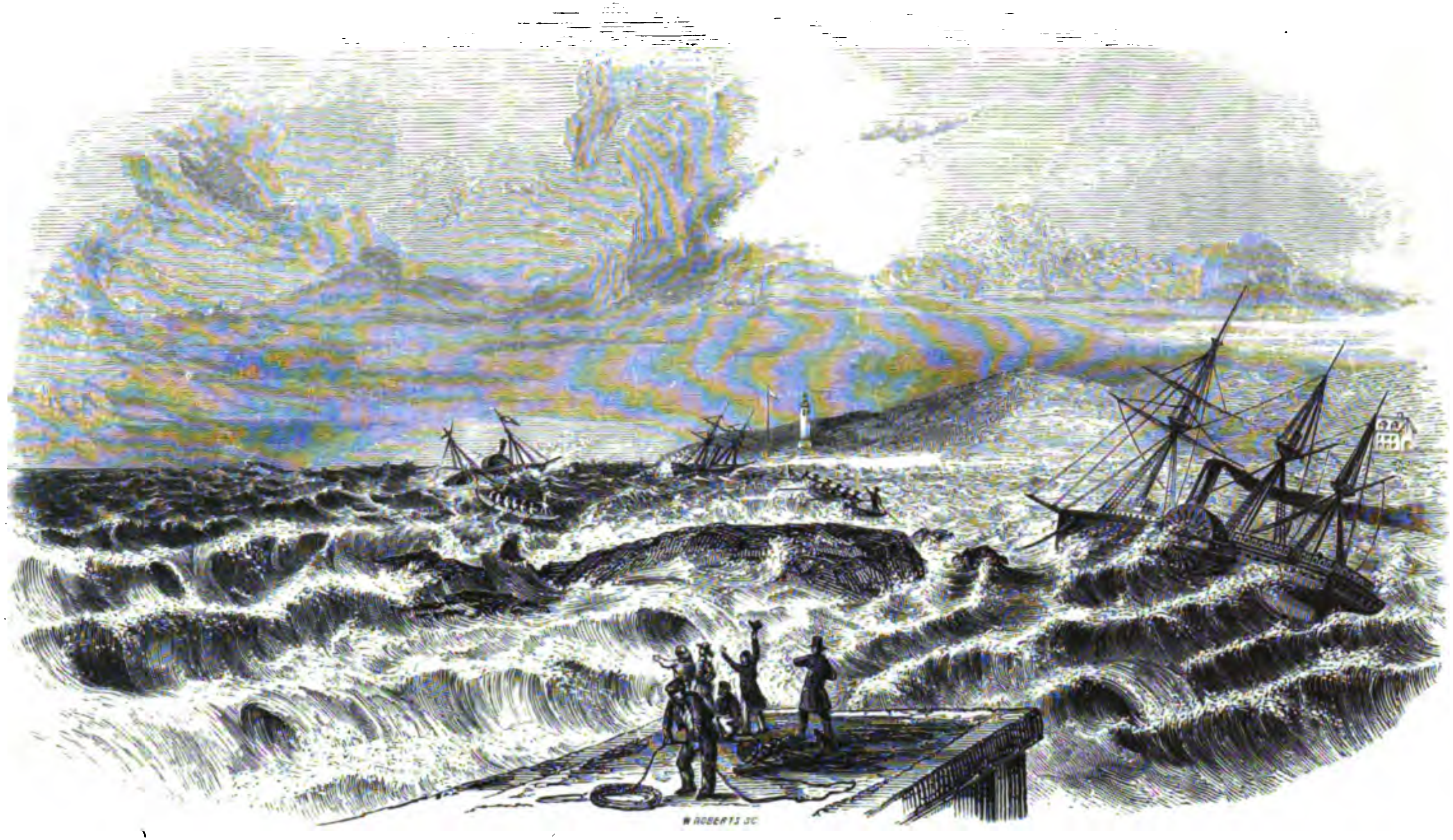
James Lawless,
U. S. M. Steamships Louisiana and Meteor.

From the Indianola Bulletin.

Wreck of the Independence.—Distressing Loss of Life.

Bulletin Office, Indianola, *March* 30, '52.

We have to announce the most heart-rending and melancholy calamity that has occurred on this coast within our knowledge. The new steamship Independence, Capt. Charles Stoddard, on her first trip from New Orleans to this Bay, is a total wreck, the cargo almost entirely lost, and six lives lost. The circumstances attending the sad event, are these. The vessel attempted to cross the bar at 10 A. M., March 26th, without a pilot, having on board a good freight and about 120 passengers, besides officers and crew. The Louisiana, drawing over a foot more than the Independence, had come over without the least trouble three hours before; but the Independence, having no pilot undertook to cross the reef, about one mile north of the channel, where the breakers rose high, and in a short time struck violently on the bar. But a few moments proved her to be in a perilous situation, and the engine was crowded in a vain endeavor to force her over; she worked ahead so little as to cause great alarm, and convince those on board she must become a wreck. Messrs. John Ayr and Laughlin M'Kay, part owners, were on board. It is enough for us to say, that the attempt to come in without a pilot, to say the least, was censurable, but it is not our wish to harrow the feelings of those already in distress.



Wreck of the Steamship "INDEPENDENCE,"—159 persons saved by the "Francis Metallic Life Boats"

Soon after the vessel struck, Capt. Wm. Nichols, one of the pilots, boarded her, and Mr. Morgan attempted to do so, but was swamped in the breakers, and escaped narrowly with his life. About noon, the ladies, declining the hazard of the *frail boats alongside*, Judge Webb, of Austin, Mr. James D. Cochran, of Lockhart, and three Germans were brought off. Directly after, one of the vessel's yawls, manned by Mr. Hubble Hovey, the chief mate, and two men, took on the young bride of Lieut. W. E. Jones, U. S. Rifles, the wife and three children of Mr. Stephen Minott, (late of Kingston, Jam., moving to Gonzales,) and young Mr. Horrell, of St. Louis, Mo., (nephew to Gen. Somerville,) and instantly followed a scene of agony and horror, the recital of which chills our blood. The boat filled in leaving the ship, and capsized in the furious breakers. The mate, in a noble effort to sustain and save Mrs. Jones, sank with her to rise no more, and before aid could be had; the greatest consternation and shrieks prevailing on board. Mrs. Minott and three children perished together, the helpless innocents clinging to her to the last. Both husbands were witnesses of the horrid scene. Mr. Horrell was rescued in a lifeless condition, but restored by prompt attention. No farther efforts were made during that day to carry off the passengers, all the boats being crushed to pieces.

At day-light on Saturday, the 27th, the steam propellor J. W. Rabun, Captain R. Hulton Kerr, having been advised of the wreck, ran down and anchored inside the breakers, about 400 yards in front of the ill-fated Independence; and in conjunction with Captains Nichols, Cummings, Decrow, Mr. George Morgan and others, made every effort with the propeller's yawls to bring off the passengers. About noon they succeeded in rescuing Mrs. Lucy Mitchel, of Groton, Conn., and Mrs. Charles W. Eldridge, of Mt. Carmel, Illinois, (mother and sister of Mrs. John Henry Brown, of Indianola,) with four other ladies and an infant; but from the increased violence of the breakers, and the *loss of their boats*, they were forced to desist.

In the mean time, Messrs. Webb and Cochran reached the U. S. Mail steamer Louisiana, Capt. James Lawless, at the Indianola anchorage, at 3½ P. M. same day, with the sad news. She had on a full head of steam, in waiting for the N. O. passengers, then near by, on a sloop, and in thirty minutes they were on board, and this noble steamship under a heavy press of steam for the wreck. Our senior, (Mr. Brown,) happening to be at the anchorage, and learning that his relatives, before named, were on the wreck, went down in the Louisiana, and, from that time, witnessed all that passed.

In the stream at Decrow's, Capt. Kerr met us, he being in a yawl, came on board, and from that time he, Capt. Lawless and the gentlemen we have already named, acted in concert. The Louisiana came to, two miles above the wreck, under Pelican Island, and manned her two Francis' Metallic Life-boats and one of the quarter boats, Capt. Lawless, Kerr and four men in No. 1, Mr. H. Potter Dimond, chief mate, commanding No. 2, and Peter Foster, second mate, the quarter boat. Arriving in front of the wreck, about 300 yards distant, (now half an hour to sun set,) the breakers rolling like hills, Mr. Dimond was ordered, if possible, to reach the vessel, and never did any man make a more noble and daring effort! Whilst in the midst of the breakers, his boat swamped and *rolled over and over, the crew clinging to her*, and by almost super-human efforts got through, half a mile above the Independence. It was now dark, and the sea becoming more dangerous; but the dauntless Dimond baled his boat, and made a second attempt to save the lives of others, at the hazard of his own, in which his boat again swamped, floated inside the breakers, and was again baled. Yet undaunted, he made a third struggle, and for the third time the boats filled, when, finding his men failing, with a reluctant heart, he gave up the effort, and floated inside, two of the crew being in an almost lifeless condition.

It was now 10 o'clock, the wind rising rapidly, and all hope for the night gone. Fires were built on shore, signals set, and dispositions made for a day-light effort on the morrow. During the latter part of the night, distress guns were fired by the Independence, which, with the roar of the surf, added to the horrors around.

At day-break, (Sunday, the 28th,) the work was renewed—other help came in the persons of Capt. James Duke, and others from the bay, and about 8 o'clock, the *first life-boat load* was taken off and transferred to the Rabun;—at 3 P. M., all were safely on the same vessel—the last gun was fired, and, amid loud huzzas, the distress signal was hauled down, and the ill-fated ship, already broken in two, abandoned to the mercy of the sea.

To discriminate among gallent men on such an occasion is not our inclination or purpose; but the praises of all on board, or in view of the scene, were heaped with such heartfelt emotion upon some, that truth demands their mention, that their names may be honored by all who appeciate noble daring and humane hearts. In this list, the rescued, point to Captains Nichols, Kerr, Lawless, Cummings, Duke, Messrs. Dimond, Peter Foster, the mate and crew of the Rabun, the detailed crew of the Louisiana, Morgan, Bailey, Serrill, and others, who perilled their lives. Capt. Geo. Heald, Bay Pilot, Otto Von Schroeder, Alfred Da Costa, Clerk, Wm. Randolph, carpenter, and the crew detailed from the Louisiana, are highly complimented. We should also state that at the request of Capt. Lawless, on Sunday morning, we sent on express to Indianola for more help, *especially the custom-house life-boat.* That appeal was promptly answered by the life-boat with a volunteer crew in part, Capt. Bochner, with the Louisa, and others, who, against a strong head wind, got down before night, though after all were safe. But we cannot name all, and no doubt have omitted some as meritorious as some we have mentioned. Where all engaged did well, we can add no more.

But there is a dark side to the painful scene, reflecting upon poor human nature to shame. Some few persons on shore (who they were we know not) appeared to be callous to the scene before them, and to be led away by the love of plunder. The crew of the New York schooner Clinton, Capt. SMITH, lying in the stream with cotton, manned her yawl with six hale men, and spent the 28th in picking up floating baggage, furniture and merchandise, against the entreaties of those around them to go to the wreck. This we saw for hours, and in the evening passed that schooner with her decks covered with the fruits of her baseness. A part of the crew of the Independence robbed the passengers' baggage, boxes of goods, &c., and after becoming intoxicated, mutinied, and made an effort to go ashore on a raft with their booty, leaving the passengers on board, which was prevented by the coolness of Captain Laughlin McKay, to whose praiseworthy conduct throughout, the passengers bear willing testimony.

In justice to all concerned, we willingly introduce here the following note from our brother-in-law, Mr. Eldridge:

JOHN HENRY BROWN, Esq.:

Dear Sir,—The following items were communicated to me by Capt. McKay, respecting the loss of the ill-fated steamship "Independence," and I place them at your disposal. I was in my state room till near the time the ship struck, and consequently know nothing personally as to the facts connected with her going in. In substance, Capt. M. said—

"On approaching the bar of Matagorda Bay, a signal for crossing was made on shore, with a flag on a pole, as we supposed, by a pilot; and judging ourselves right, in view of the ranges, we attempted the crossing. As soon as the ship struck the shoal water, she sheared to the north, and the current being very strong in the same direction, she was brought upon the bar at near equal distance from deep water on either side. Every effort was made to save the ship by throwing over her cargo and working her engines, but without avail. She remained heavily thumping upon the bar for thirty hours without bilging, the engine most faithfully performing its work, until the water extinguished the fires."

It was a fearful and distressing termination of a trip that had been commenced and, till then, prosecuted under the brightest auspices, affording the greatest satisfaction to all the passengers, of which they had designed giving a public expression. How far culpability attaches to the officers of the ship for venturing upon the bar, under any circumstances, without a pilot, I am not prepared to say. But of this I am *perfectly sure*, that though the loss of their ship to them was great, they felt it as nothing in view of the precious lives that were sacrificed to a watery grave.

And I would bear evidence, which all the passengers, so far as I could lean, would corroborate, to the calm, judicious and devoted efforts of the officers and owners (on board) particularly Capt. McKay, for the comfort, protection and safety, of the remaining passengers whilst exposed on the wreck.

Yours, truly,
CHAS. W. ELDRIDGE,
Illinois.

Such of the passengers as saved their money, offered liberally to reward their deliverers, but in every instance it was promptly refused. The laconic reply was, "we have labored to save lives, not for money." Under these circumstances, a contribution was raised, and committed to the management of Mr. Eldridge, to procure appropriate medals to be presented to Captains Lawless, Kerr, Nichols and Mr. H. P. Dimond, representing respectively the Louisiana, Rabun, and the Pilots and their assistants.

We append a list of the passengers as full as we could get, being a total, including the officers and crew, of 167 souls.

To CAPTAIN JAMES LAWLESS,
Of the Steamship Louisiana:

Sir,—We, the passengers of the unfortunate steamship *Independence*, saved from her wreck through your magnanimous and most efficient aid, desire hereby to present to you the tribute of our grateful hearts. We are apprised of the haste with which, when apprised of our danger, you came to the relief of us, the passengers of a rival boat. WE FEEL CONSCIOUS THAT TO YOUR METALLIC LIFE-BOATS, manned by their daring crews, we are most indebted (under Providence) for our safe deliverance from impending death. We appreciate the patience with which you, as well as Capt. Kerr, submitted to the detention of your large ship from day to day in our behalf, and know well the cost of that detention must have been great in time and money. We also know that with the true sailor's large heart, you would not listen to any proffer of reimbursement for said loss. May the recollection of this truly generous and most noble deed ever be a living well of pleasure in your breast, as it will of gratitude and thankfulness in ours. Also to Mr. H. Potter Dimond, your noble and daring mate, do we feel bound under a heavy debt of obligation, for his persevering efforts to reach us, in which it seemed that he and his crew must perish in the attempt, as their boat was repeatedly swamped. But heroism conquered every obstacle, and he only left the wreck when he could haul down the flag of distress, and fire the last gun that all was safe. To Capt. W. Nichols, coast pilot, we are also greatly indebted for his cool intrepidity and skilful management of the first boat that come to our succor, and greatly did we admire the spirit with which he braved danger in going to the rescue of his friend Morgan, who in his second attempt to come to us, filled, and powerless and alone, was rapidly drifting out to sea, to our additional distress. Messrs. Morgan and Cummings, pilots, Capt. Duke, and others whose names we cannot command, will please also accept our many thanks, for their important aid.

Signed on board propellor Rabun, March 28, 1852.

CHARLES W. ELDRIDGE, STEPHEN MINOTT,
W. W. EDWARDS, E. L. JORDAN,
C. H. JORDAN, W. E. JONES, U. S. A.
And other passengers.

From Com. C. W. Skinner.

NAVY DEPARTMENT, BUREAU OF CONSTRUCTION,
EQUIPMENT AND REPAIRS, *July 1st*, 1848.

Sir,—I have the honor to present, through you, to the Minister of Marine of France, the model of a boat now building of copper, by direction of this bureau: and if the boat is approved after trial, they will be adopted for the vessels composing the U. S. Navy. Inferior models have been used in mercantile marine, and given satisfaction.

Two of the boats, which recently descended the river Jordan into the Dead Sea, were made of metal; one other of wood which *was dashed to pieces in descending the rapids.*

The officers conducting the enterprise state, that the metal boats alone were capable of resisting the violent concussions which they received in shooting over those descents, of which they encountered twenty-seven; and the only alteration the copper boat sustained, was from indentations by striking rocks, which, with a hammer, were readily removed. They did not leak one drop; the air vessels at their extremities rendered them very buoyant. They will wear a long time, and, when no longer serviceable, the material goes far towards paying for a new boat.

Some have been built of galvanized iron, and are approved by the officers that used them. The one now building is of the dimensions of a frigate's quarter boat, and as soon as ready, will be put to a severe trial.

Those that were built for the exploration of the Dead Sea, were made in sections, for the convenience of transporting them over mountains on the backs of camels; they were disjointed or joined together with great ease at the place of embarcation.

From the experience already had in the use of metal boats, by the mercantile marine, they are considered more economical and superior in all cases to boats of wood.

I am, sir, respectfully, your obedient servant,
To M. ALEX. VATTEMARE, CHAS. W. SKINNER.
Washington City.

NAVY DEPARTMENT, BUREAU OF
CONSTRUCTION, EQUIPMENT, &c., *July* 19*th*, 1850.

Sir,—Having been informed that Congress was about adopting measures for the prevention of the great loss of life which sometimes occurs from steamboat disasters on our waters, I take the liberty of expressing my opinion, founded on the various trials to which Metallic Boats, (furnished with air chambers,) have been exposed; that they afford the best means of safety to the lives of persons exposed, either by the foundering of a vessel, or destruction by fire.

A cutter so fitted, 26 feet in length, furnished to the United States frigate "Savanna," was reported to this Bureau by the commanding officer, New York, to be capable of sustaining inside, from 25 to 30 men, when filled with water.

The great advantage they possess over boats built of wood, is, that they are fire-proof, and are not liable to leak when exposed to the action of the sun, *or to be mashed when coming in contact with a ship's side, or even rocks.**

Those used by Lieut. Lynch in descending the rapids of Jordan, although they received violent concussions in striking rocks, *did not leak a drop*,—the indentations thus produced were removed by a common hand-hammer.

Had the unfortunate Griffith, on Lake Erie, been supplied with two of these boats, 30 feet long, and of suitable width, many, if not all her passengers, could have been saved.

Many vessels of the navy have been furnished with one for the purpose of crossing dangerous bars, landing in a heavy surf, or lowering at sea in the event of a man falling overboard; for such purposes I consider them superior to any others heretofore used in the navy or mercantile marine.

Very respectfully, your obdt. servt.,
(Signed,) CHAS. W. SKINNER.
HON. DAN'L S. DICKINSON,
U. S. Senator,
Washington City, D. C.

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74 UNION PLACE,
NEW YORK, *Sept.* 23*d*, 1852.

MR. JOSEPH FRANCIS:

In consequence of my high appreciation of your "Metallic Life-boats," I have written and spoken in favor of them in various instances, and now, with pleasure, give you this testimony of my approval of them.

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* See letter to A. Vattemare, dated July 1st, 1848.

I have examined the Copper Boat used on board the U. S. Steamship "Mississippi" during her late 30 months cruise in the Mediterranean, and so little injury had it sustained, that with very slight repairs it was rendered as good as when first taken from your workshop, which is evidence of the durability and economy of your Life-boats. Your boats have been tested in the surf and seaway, and are buoyant and safe, and as there is no shrinkage in them ; they are ever ready for service. Among other advantages, they are fire-proof, which I consider of vast importanoe for the preservation of life, and are not liable to receive injury from concussion produced by the guns.

In fitting out vessels for any service, I would certainly supply them with your "Metallic Life-boats," either with respect to their safety or economy.

I am of the opinion, that if their had been two of your boats on board the steamboat "Henry Clay" when she was destroyed by fire, very nearly all the lives which were lost would have been saved. I am respectfully,

Your obdt. servt.,
Henry Eagle,
Commander U. S. Navy.

From Commander Chas. H. Bell.

March 27*th*, 1851.

My Dear Sir,—I presented the book you gave me yesterday, containing "Testimonials" respecting your "Metallic Life-boats," to a gentleman of Charleston, South Carolina, thinking it might be of service to you in that quarter; before I gave it, I wrote a few lines on one of the fly leaves. It has since occurred to me that a copy of these lines might be of service to you, and I therefore enclose them, giving you permission to use them in any way you may think conducive to your interest.

Very respectfully,
Joseph Francis, Esq., N. Y. Chas. A. Bell.

I have carefully examined and inspected Mr. Francis' "Metallic *Life-boats*" at various times within the last three years, and believe them to be very durable, and superior to any wooden boat now in use. Those made of "Galvanized Iron" I have seen tested without injury by severe blows on the bilge from a heavy *sledge hammer*, which would have stove and rendered unfit for service any boat, however strong, made of wood.

As *Life-boats*, they are safe in all weathers, combining lightness with great strength and durability, are easily managed, and not liable to injury by a severe thump alongside. As *Surf-boats*, nothing can surpass them.

The "*Metallic Car*," as now constructed, is much improved, and no passenger vessel should be without one. They are not expensive, take up little room, and, with common care, will last a generation without repairs.

Chas. H. Bell,
Commander U. S. Navy,
Superintendent and Inspector of Bremen & Havre
Line of U. S. Mail Steamships.

New York, *March* 26*th*, 1851.

From Professor Grant.

Relative to the Copper Gig made for the United States Sloop of War Albany. DIMENSIONS: *Length,* 30 *ft.; Beam,* 4 *ft.* 4 *in.; Depth,* 23 *in.; Thickness of Copper,* 32 *oz.; Straight Sheer, like a Race-boat.*

Mr. JOSEPH FRANCIS,
New York:

Sir,—Although I have never had the pleasure of knowing you personally, I know you well by reputation, and I deem it my duty to lay before you the following facts with liberty to make use of them as you please.

Your exertions for so many years to bring to perfection an instrument to preserve human life from wrecks by Storm and Fire, and in which you have been so successful, deserve all praise, and to withhold any information that might stimulate or aid you in your efforts, would be most criminal.

WASHINGTON, *Sept.* 30, 1850.

Being on duty in the U. S. service during the year 1848, on board the U. S. Steam Frigate "Mississippi," in the harbor of Sacrificio, near Vera Cruz, and requiring a boat to transfer disinfecting material from the Castle of St. Juan de Ulloa, I made a requisition for one, and was informed that no boat could be had on the station for that purpose. I subsequently leraned, during the month of January, that one of your Copper Life-boats was then lying a wreck in the sand on the landing of the Castle. I immediately repaired to the Castle, and discovered the boat lying in about three feet of water, half full of sand, and large pieces of old iron inside, some weighing 150 pounds. She was exposed to the break of the surf on the shore, and the wood-work had been broken, such as her seats, row-lock, and washboard, by apparently heavy blows of a sledge, or a large iron bar, lying near, as the marks of the same were plainly visible upon them. On cleaning out the stones, iron, &c., I discovered large concave indentations upon various parts of her sides, made by heavy blows upon the *inside,* apparently with a heavy sledge or bar of iron. These indentations were concave like a dish, but not broken through the copper. They were evidently made, however, *with the design of destroying the boat,* which was unsuccessful from the yielding nature of the copper.

On *lifting up the ceiling,* I discovered five large holes in the bilge and bottom of the boat, apparently made with the same instrument, which was more successful in this part, as they had evidently been punched through while the boat rested on the coral rock, thus preventing the copper from yielding or becoming indented. I repaired these holes by *placing a sledge on the inside and beating the burr from the outside* with a hand hammer, thus closing the fracture, apparently as strong and tight as when new. I then fastened the seats and launched the boat, seemingly as good as new. The whole operation certainly did not require an hour's labor, and in my opinion *less time was employed in repairing the boat than in the attempt to demolish her,* if the marks of blows upon her were any criterion.

The boat was 30 feet long, narrow, low, and straight, evidently not made for sea service but for a man-of-war gig. She *worked well,* however, at sea, as myself and two hands navigated her between Sacrificios and the Castle for several weeks, in *all kinds* *of weather*, and two or three miles of this passage is in the open sea. On one occasion, we were overtaken by a severe norther, which, by the time we reached Washerwoman Shole, within a mile of the harbor, was so powerful a gale of wind, as to drive spray fifty feet high over the mole of Vera Cruz harbor; yet in the face of this, THREE of us brought this 30 feet boat safely to the Cumberland frigate, under the lee of the Castle. I am confident any wooden boat of the same dimensions would have inevitably been lost under the same circumstances, as we were several times nearly half full of water, by the sea breaking over. The buoyant air-tanks kept the boat well up, and we arrived safely on board.

The above boat formerly belonged to and was made in 1846 for the sloop of war "Albany," Capt. Breese, and had been thrown one side for what was supposed inefficiency, but she was proved to be the strongest, swiftest and safest boat in the Gulf Squadron, notwithstanding the unjust prejudice against her. She is still in use as a shore boat, and good yet.

(Signed,) ROBERT GRANT.

From Com. Wm. D. Salter.

NAVY YARD, NEW YORK, *Jan 17th*, 1851.

Sir,—I recommend that the receiving ship, North Carolina, be allowed one of "Francis' Iron Boats," such as are allowed in the frigates and sloops of war.

The wooden boats of this ship are constantly receiving repairs, and I am of opinion it would be a matter of economy to furnish her with one, if not two of the Galvanized Iron Boats.

Yours, obediently,
WM. D. SALTER,
Commandant.

COM. CHAS. W. SKINNER,
Chief of the Bureau of Constuction, &c.,
Washington.

From Capt. Samuel L. Breese.

Extract of a letter from Capt. Samuel L. Breese, commanding U. S. Sloop of War Albany.

August 16th, 1847.

In consequence of the leanness of the Albany aft, she sends so deep in a heavy sea or lying to, or becalmed, that she often dips up her stern boat full of water, which was the case with the Copper Gig. Not liking her, I left her for the use of another vessel of the squadron. Barring accidents, however, I think a metal boat, in point of durability, is superior to a wooden one. *This gig had no gripes under the midships, when "dipped up full of water," and yet did not break down.*

From Lieut. Washington A. Bartlett.

NATIONAL HOTEL,
WASHINGTON, *Dec.* 14*th*, 1850.

Sir,—In answer to your inquiries as to my observations on the character and performances of your Metallic Boats on the coasts of California and Oregon, and of their general value, as compared with wooden boats of like capacity, &c., &c., I have to state that,

There is a large number of your boats in use in California and Oregon, in every possible variety of employment to which a boat can be put, from the largest to the very smallest; and of their ability to endure hard service beyond that of a common boat, no one could doubt, after seeing the rough handling they get there. In no instance have I seen one out of repair.

The two that I purchased of you have done all they were expected to perform, and both were so much in favor with others, that they were often stolen from their moorings, and for this reason they were sold, to avoid the annoyance of seeking for them; they are still in use in the Bay of San Francisco.

At the mouth of the Columbia, the pilots have one of your small size, which they keep as a *safety boat*—and in one of the same size, Major Hathaway, U. S. A., with a party of seven persons, crossed the North Breakers of the Columbia River Bar—accidentally going to sea in a dark night, and re-crossed the Breakers the next day, *without shipping water.* This was a feat for a *landsman* to perform, of no ordinary character!

The large boat which you furnished to my friends who went round the Cape, left the ship with a party of nine persons, when seventy miles distant from the island of Juan Fernandez, and in a gale which, the same night, reduced the canvass of the ship to a close-reefed top sail, causing those on board the ship to despair of ever seeing them again; the little Metallic Boat rode it out in safety, and the whole party safely landed the next morning, while it blowed so hard the ship could not approach the shore. I have used your boats with great satisfaction.

I know that in the tropics, where there is a great shrinkage, and where boats of wood so soon become "nail-sick," and where the worm is so destructive to wood, *your boats are always ready for service*, without the necessity of repair, while they will endure without injury an amount of thumping on rocks and beaches which will destroy an ordinary boat.

The boat you supplied to the U. S. Ship Vincennes, Capt. Hudson, was in daily use; and for lightness, speed, and safety, the favorite boat of the ship. The first lieutenant stated to me that her performance was admirable—that she did all the work of the ships. Such a boat, where an economy of men is desirable, is of the first importance in the equipment of a ship.

Having, some years since, seen your first essay in the construction of the Metallic Boat, both for ordinary use, and for Life-boats, I have, with no little interest, watched the progress you have made in overcoming prejudice and opposition, and consequently, wherever I have been, when meeting with "Francis's Metallic Boats," I have been particular to inquire into their performance, more especially among seamen; and I have found in the last two years, whether from actual trial, or the widely disseminated testimony of intelligent seamen, who have fully proved their merits, that there is now little opposition to them in any quarter, their superiority for durability and safety being generally admitted.

For my own part, in fitting out a vessel for any service, I would not fail to supply her with your Metallic Fire-proof Boats, both for safety and economy.

Yours, very truly,
(Signed,) WASHINGTON A. BARTLETT,
Lieut. U. S. Navy,
Ass't Coast Survey.

To JOSEPH FRANCIS, ESQ.,

From John S. Rhea.

CUSTOM HOUSE, POINT ISABEL, TEXAS,
COLLECTOR'S OFFICE, *September 9th*, 1851.

Sir,—I have the pleasure to hand you enclosed the report of Capt. Thomas B. King, Port Pilot, in relation to the performance of your "Metallic Surf Boat" in saving the passengers from the wreck of the steam-ship "Globe," on the morning of the 16th June last, at this port.

The pilot, whose testimonial I send you, is one of great experience and judgment.

I am assured that no other boat could have lived in the tremendous sea running on the bar at the time.

I am, very respectfully,
Your obedient servant,
JOHN S. RHEA,
Collector.

JOSEPH FRANCIS, Esq.,
New York.

From Thos. B. King, Pilot.

PORT OF POINT ISABEL,
July 15th, 1851.

JOHN S. RHEA, Esq.,
Collector of Customs:

I am happy to report to you that the "Francis' Metallic Life Boat" which you put in my charge, for the purpose of saving life and property in cases of wrecks on the coast or bar of this port, comes up to the high recommendations of her builder.

I had an opportunity of testing her qualities in landing the passengers and crew of steam-ship "Globe," on the bar of this port, on the 16th June, in a tremendous sea and surf, through which no other boat that is open could possibly live. She can neither capsize, or fill sufficiently to prevent her being managed. Had she not been here, there would have been a loss of life.

(Signed,) THOS. B. KING,
Pilot.

A true copy,
JOHN S. RHEA, Collector.

PORT OF POINT ISABEL,
March 22nd, 1852.

JOHN S. RHEA, Esq.,
Collector of Customs:

Sir,—I am happy to inform you that the Life Boat under my charge and management had her qualities for living and handling in broken water severely tested yesterday afternoon, March 21st, 1852. Capt. John Thompson, of steam-ship Yacht, with five men, went down to look at the Bar, and sound it, if practicable; the ebb tide was running strong, and wind blowing fresh from the north, with a very heavy surf; his boat upset, and the current and tide set them along shore to the southward. On the alarm being given, I launched the Life Boat, with a crew of five, and crossed the Bar through a course of very heavy breakers, without shipping any; pulled down outside of the breakers to the southward; discovered the boat, bottom up, with three men holding on to her. I rounded to and dropped the Life Boat to them, by her oars, without difficulty, although, through the alarm or mismanagement of the man pulling the bow oar, his oar caught and broached her to on the first (which is always the heaviest) breaker, (in landing); the sea filled her, and would have washed the men out of her if I had not taken the precaution to lash every man to his thwart. *After she was full of water she was more easily managed than when light*, as the sea could not knock her about so much. I succeeded in reaching them, and laying hold of them without injuring them or the boat.

One poor fellow sunk to rise no more, three minutes before I reached them.

I consider this Life Boat safe in any sea which it is possible to get anything out against, and that all places where accidents are liable to occur ought to be provided with them. Your obedt. servt.,

(Signed,) Thos. B. King,
Branch Pilot.

From Hon. W. A. Graham.

Navy Department,
September 6th, 1851.

Sir,—You will receive enclosed herewith a copy of the report of Capt. W. D. Salter, Commandant U. S. Navy Yard, New York, in reference to the Galvanized Iron Boats furnished the U. S. brig Dolphin, the frigate St. Lawrence and other vessels fitted at the Brooklyn Yard. I am, respectfully,

Your obedient servant,
William A. Graham.

Joseph Francis, Esq.,
New York.

Navy Yard, New York,
September 5th, 1851.

Sir,—Agreeably to your order of the 1st inst., I have the honor to report that the Galvanized Iron Boat brought here by the brig Dolphin, had been in use on board that vessel for 39 months, the greater portion of which time the brig was cruising in the East Indies. The officers of the Dolphin informed me that their Iron Boat was used more during the cruise than all the other boats. When this boat was overhauled here, on the return of the Dolphin from her late cruise, she was found in such good condition, it was only deemed necessary to paint her, and she is again one of the boats of that vessel. In respect to the same kind of boat furnished from this yard to the frigate St. Lawrence, about eight months since, I would respectfully report that she has been returned, so far as can be observed, in as good condition as when the St. Lawrence took her from here, new in February last. All the boats furnished to the different vessels fitted at this yard since I have been in command, to this date, have been favorably reported.

Very respectfully,
Your obedient servant,
W. D. SALTER,
Commandant.

COM. CHAS. WM. SKINNER,
Chief of Bureau of Construction, &c., Washington.

From Capt. J. C. Long, U. S. N.

EXETER, (N. H.) *December 5th*, 1851.

Sir,—In reply to your communication of the 2d inst., relative to the merits of "Francis' Patent Metallic Life-boat" on board the "Mississippi" during my last cruise of thirty months in the Mediterranean, I have respectfully to state that I made a general report on her merits, under date of 19th November, ultimo. (The report was not received.)

It now gives me pleasure to state more fully, that for naval purposes, as quarter boats, barges and dingys, they are admirably adapted. In the first place they are tighter, being always tight after being suspended for a long time at the davits, and I am of opinion they will withstand the concussion of the guns. From the construction of their row-locks, &c., well adapted for "cutting-out" purposes, being buoyant, pulling easy without noise.

The performance of the copper boat *I had*, was not so fast as that of the quarter boat of wood, owing to being too sharp and too short on the floor, which made her too lively in the chop of a sea, but she sailed very fast.

The expense of repairs was nothing on the copper boat, being only that of wash-boards and wood-work, whereas the woaden boat kept the carpenters constantly employed. The paint on the Copper Life-boat would always look well and reflect credit on the ship by her neat appearance, and was the admiration of all who saw her. The boats referred to were alternately employed for the same purpose, they being the only quarter boats we had.

I take pleasure in saying that up to the first landing of the Life-boat at the Navy Yard, New York, she was in as good order as at any time during the cruise, and she was noticed by many persons at the time; but on my return from Washington, she looked to have been very much abused, she being the only boat that would float, no doubt, was used with less care by the crew, impatient for their discharge.

I am, Sir, respectfully,
Your ob'nt. serv't.,
(Signed,) J. C. LONG,
Captain U. S. N.

Comm. CHAS. W. SKINNER,
Chief of the Bureau of Construction, &c.,
Washington, D. C.

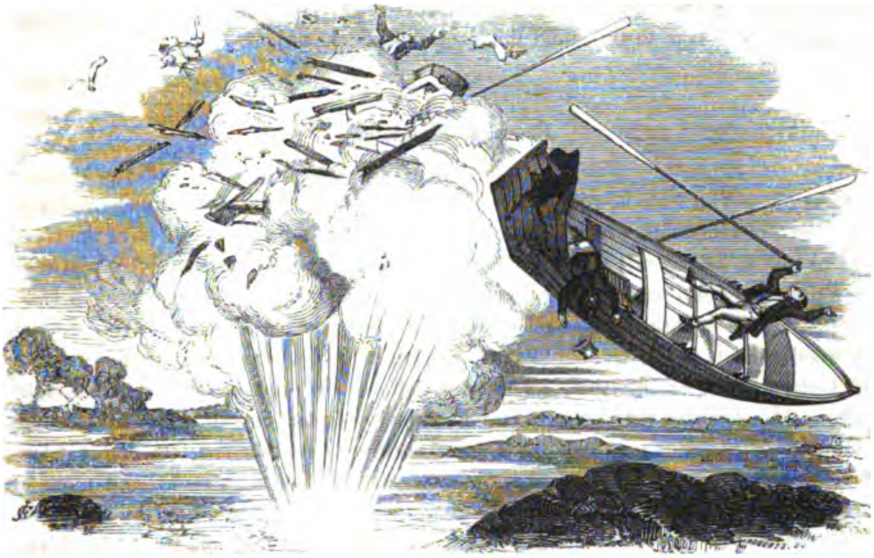
From Br. Col. H. A. Brown., U. S. A.

FORT MORE, *February 21st*, 1852.

Sir,—I have delayed answering your letter until after I should have had the barge some time in use, and have seen her in rough as well as smooth waters. Both of which having now seen, I, with great pleasure, express my entire satisfaction with her performance. She appears to be every thing I expected, and I have no doubt but that in the roughest weather we ever shall have in this harbour, she will live. She rows easy, and is buoyant and dry, riding the waves like a duck, and although I have not yet tried her speed with my other boats, yet I find she makes quite as good time in crossing to and from the city as they do. I have no doubt of the great superiority of your metallic boats over the wooden ones, and hope that they may, as I doubt not they will, soon be generally introduced in the service.

I am, sir, very respectfully,
Your obdt. servt.,
H. AMEY BROWN,
Br. Col. Commanding.

Mr. JOSEPH FRANCIS.



EXPLOSION AT HURL-GATE.

It is well known, that for some time past Prof. Maillefert has been engaged in removing the immense rocks of Hurlgate, in the East River, which have for so many years been a barrier to the safe navigation of the Long Island Sound. This work has been carried on by the munificence of our merchants who have advanced the moneys for the progress of the work. Conspicuous in the prosecution of this great achievement has stood Mr. E. Meriam, who, by his untiring industry and perseverance, without pay; it may be truly said, the work has been brought within reach of a speedy and satisfactory conclusion. To Prof. Maillefert are the public indebted for his scientific and skillful prosecution of the enterprize, the most enlightened countries of the world accorded to his name, distinguished honor, for the success of his hitherto deemed impracticable experiments. His mode of procedure is simply the firing of large charges of powder, some 100 to 150 pounds each, laying under water and upon the surface of the rock. The powder is enclosed in a tin canister, to which is connected wires, and to the other ends a galvanic battery, laying in a boat ready to be fired. At each discharge the rocks are split, and a repetition of them, have so far succeeded, as to admit of any of our naval vessels passing through the channel without difficulty. A few months since, by some unaccountable mistake, the wires attached to the canisters of powder submerged, became deranged with those attached to another canister which lay in one of the boats, and Prof. Maillefert proceeded to touch off the discharge by the galvanic battery—proving however the wire—which was connected with the canister laying in the boat. Of course the wooden boat was shattered to ten thousand atoms, and the two men in her dreadfully mangled and killed. Prof. Maillefert and his brother-in-law, who were in the Metallic Life-boat, were thrown with the boat, by the force of the explosion, more than one hundred and fifty feet. The air chambers in the boat nearest the explosion were torn out, and the end of the boat bent up, thus forming a shield as it were, protecting the persons in her from the force of the explosion. Reference to the annexed engraving will give the reader some idea of the explosion, while the letters annexed will confirm the evidence already offered to show the strength and ability of the Metallic Life-boat to withstand the most violent concussions.

From B. Maillefert.

Pot Cove, Astoria, L. I., 10*th Feb'y*, 1852.

Dear Sir,—You state in your letter of yesterday, that Mr. Joseph Francis wishes to have the two Life-boats, which he has generously lent us for our operations at the Gate, sent to him to be properly overhauled and repaired, after the long and severe trial they have undergone during these last seven months. I should be extremely sorry if I was compelled to part with these excellent Metallic Life-boats, even for one single day, as no wooden boats would be able to stand more than a few days the severe service at the Gate, without having their planks fairly drawn out of their places, and thereby getting so leaky, that nothing but constant pumping or bailing can prevent them from sinking. Although these two boats have been subjected to constant and extreme rough usage, having been knocked about amongst sand, ice and rocks, and more or less severely shaken by every one of the powerful concussions produced by the numerous explosions of my great charges of 125 pounds of powder each, which have been fired at Hurlgate as well as on Diamond Reef, and the effects of which they fully endured, being placed at a distance of some thirty or forty feet only from the explosion. They are still in perfect order, and as sound and safe as ever; not a rivet is out of its place, and if they were only painted afresh, it would, in fact, be impossible to distinguish them from new ones.

The saving of time and expenses for repairs, which wooden boats would have required, is of no small importance, and besides this, my men profess such unbounded confidence in the safety of these boats, that in one of them they will fearlessly stand by me, should it be even directly over the explosion, as was the case on the 12th of November, 1851.

I cannot praise these boats too much, and I confidently trust that Mr. Joseph Francis will let me use them until my operations are ended.

I remain, dear sir,
Your very obdt. servt.,
(Signed,) B. MAILLEFERT.

E. MERIAM, ESQ.,
New York.

ASTORIA, *April* 19*th*, 1852.

JOSEPH FRANCIS, ESQ.,

My Dear Sir,—Up to this day I have been prevented from returning you my very heartfelt thanks for the truly wonderful double preservation from death of my humble self. God in his endless mercy pointed you out to be, through your sublime invention, the Life-boat, the means of saving me, first, from being horribly mutilated by the late explosion at Hurlgate, then again from being drowned afterwards. And to you, sir, do I return my everlasting gratitude; truly you may feel proud of the hundreds of poor wretches you have already rescued from a watery grave, with these same Metallic Life-boats.

My sight is yet very weak, and I am prevented from writing to you on this subject according to the present state of my feelings; but, my dear sir, believe me, I shall pray the Almighty to preserve your valuable life for a long period of years to be the means of saving others. May your country reward you according to your merit; and I conclude by saying, that as long as breath is left me, I shall remember that I owe my life to you, and that you shall make all the use you can of it, as humble as it is, is the greatest wish of Your ever grateful, and most obdt. servt.,

(Signed,) B. MAILLEFERT.

P. S. I have also to state, that what I have said above, is fully appreciated and felt by my brother-in-law, who was at the other end of the Life-boat, and who consequently owes his life also to you.

(Signed,) B. MAILLEFERT.

Letter to E. Meriam, Esq.

E. MERIAM, Esq., ASTORIA, *April* 19*th*, 1852.
Brooklyn:

Dear Sir,—Since the fatal accident that took place at Hurl Gate, on the 26th ult., this is the first time that I am able to use my sight, so providentially recovered, and I cannot make a more appropriate use of it than by stating to you the following fact:

In the beginning of February last, you wrote me that Mr. Joseph Francis, the inventor of the Metallic Life-boat, wished to have the life-boat used by me sent to him, for the purpose of repairing it, but I wrote you in reply that I could not spare the boat even for a single day, fully appreciating its value and great superiority over wooden boats, and moreover, it did not want any repairs, notwithstanding the rough usage to which it had been subjected for seven months past; it was quite providential that I insisted in keeping it, as scarcely a month after, this same boat saved my life in two distinct ways.

First, in protecting me from the immediate effect of the explosion, as the end of the boat, instead of flying into small fragments in every direction, as did my wooden boat, it only bent up and acted as a shield, behind which I was protected to a certain extent. Secondly, It saved me from drowning, in the manner following: When the charge exploded, which was only three feet distant from the stern of the life-boat, and about seven feet from myself, the boat, together with me and my brother-in-law, were sent to a distance of 135 feet, and I sunk to the bottom, where I remained senseless for three or four minutes, according to the statements of all the bystanders; on recovering, and after incredible struggles, having only the use of one arm, I came to the surface, and was greatly relieved to perceive some twelve yards off my faithful life-boat floating, with my brother-in-law supported by it. After sinking and rising once more, I succeeded in getting hold of the boat, which floated so light that ten or twelve persons could have been supported by it; no other object was seen floating in any direction but very small fragments of the wooden boat, too small to be of any service as life-buoys.

It is a fact truly worthy of public notice, that the boat was not supplied with any extra buoyant power, such as corks, India rubber buoys, &c., but was purely and simply supported by its own metallic air chamber.

This goes far to show to what hardships these admirable boats can be subjected.

They may be knocked about upon rocks, or twisted out of shape, or bent up by superhuman power, yet in despite of all, they will float and be the means of saving lives, as in my case.

In conclusion, I have to state that my firm conviction is, that had my poor unfortunate men been in one of these Metallic Boats, *instead of a wooden one*, some of them would have been saved, as they were *mutilated by the fragments of wood;* for instance, Capt. Southard, who stood no closer to the exploding charge than myself, was struck in the side by a fragment of his wooden boat, while I was protected by the iron sides of the life-boat.

I remain, my dear Sir,
Your obedient servant,
(Signed,) B. MAILLEFERT.

Hon. John A. Dix.

PORT CHESTER, *September 16th*, 1852.

I have had two of Francis's Metallic Life-boats in use for several years, and I consider them in all respects preferable to wooden boats. The largest of my boats is schooner-rigged; she has been afloat and in constant use, in summer and autumn, for five years, and I have not expended five dollars on her hull, except for painting. She has been driven ashore twice, in gales, without sustaining any injury, except in her rigging. For safety, durability, convenience and economy, I consider her far superior to a wooden boat.

JOHN A. DIX.

Capt. R. F. Loper.

PHILADELPHIA, *September 7th*, 1852.

JOSEPH FRANCIS, Esq.,

Sir,—Enclosed please find order for a suit of Metallic Boats for my new steamer.

I believe I was one of the first to patronise this successful invention, and I have purchased many boats for the use of my steamers, which have been in use some five years without having had any repairs. I deem it a matter of justice to you to give you my experience and opinion as to the comparative merits of metal and wooden boats.

The Metallic Boat is always tight and ready for use in cases of emergency; their buoyant power being confined in metallic air chambers, gives great security; they need no repairs, and cannot become water-soaked or worm-eaten, whilst on the other hand, the wooden boat can never be relied upon for tightness, and would be broken or stove by striking a wreck or rocks, which could have no such effect upon a metal boat. For safety or spare boats, they are invaluable, and being "Fire-proof," no other boats could compare with them, combining, as they do, all the qualities of durability, lightness and safety. I give them a decided preference.

Very respectfully yours, &c.
(Signed,) R. F. LOPER.

Exploration of the Dead Sea.

The following spirited and interesting description from Jacob Abbott, Esq., now travelling in the Holy Land, and published in Harper's Monthly Magazine for September, will give some idea of the difficulties attending the expedition of Lt. Lynch, U. S. N., to the Dead Sea—but as our extracts extend to the performance of the boats only, we would refer the reader to the Magazine itself for a perusal of this, and many other interesting descriptions from the pen of this instructive and indefatigable writer.

The OFFICIAL REPORT, as well as letters from LT. LYNCH, and other officers who accompanied the expedition, herewith presented, to an UNPREJUDICED mind, must prove the superiority of metal boats over those of wood.

LYNCH'S EXPEDITION.

"Notwithstanding these difficulties, however, adventurous travellers have in all ages been found disposed to make attempts, more or less determined, to explore this secluded region. The most important, and far the most successful of these attempts was one made in the year 1847, by Lieutenant Lynch, an officer in the navy of the United States, who entered the Jordan at the Sea of Galilee, with three boats and a company of ten American seamen, and passed down through the whole course of the river to the Dead Sea. He afterwards made a very thorough and careful exploration of that sea. It is, however, only with his adventures on the Jordan that we have now particularly to do.

Lieutenant Lynch proposed his plan to the proper department at Washington, and after a time received an order to undertake it. He was to be sent out to the Mediterranean in command of a store-ship, laden with supplies for the Mediterranean squadron, and was to take the boats and men necessary for his expedition on board this store-ship. On arriving upon the coast of Syria he was to leave the ship, and proceed across the country with his boats and men to the Sea of Galilee, and there commence his voyage.

THE PREPARATIONS.

Lieutenant Lynch having received his orders, immediately commenced making the necessary preparations for his enterprise. He provided two metallic boats, one of copper and one of iron—and both constructed by Mr. Francis on the principle of his life-boats. These metallic boats being lighter than those of the same burden made of wood, could be transported more easily, it was thought, across the country; and besides it was expected that they would be better able to resist the shocks and collisions to which they might be exposed in descending the rapids and cataracts of the river. A wooden boat, in striking a rock, is oftentimes split and splintered, or otherwise hopelessly damaged, where an iron or copper boat would only receive an indentation which would do it no injury other than marring the beauty of its form. And even in cases where a hole is made, the opening in the case of a metallic boat, is merely a protrusion which can often be closed again by blows upon the inside with a hammer. Ten skilful and able-bodied seamen were selected for the enterprise, all of whom pledged themselves to abstain entirely from all intoxicating drinks during the course of the expedition. This pledge they faithfully fulfilled, and it was to their being thus saved from the deleterious influences or the insidious poison, that Lieutenant Lynch attributed the remarkable powers of endurance which they afterwards evinced under the toils, privations and hardships to which they were exposed. Besides these seamen there were several other persons attached to the expedition, in various capacities, making the whole number seventeen.

The boats were so constructed that they could be separated into parts for the purpose of being conveyed across the country upon the backs of beasts of burden, should it be found impossible to convey them in any other way. It was hoped, however, that they might be drawn over the land entire, and sets of trucks were provided for the purpose of conveying them. In order, nevertheless, to be prepared for either mode, whichever might seem most expedient on the arrival of the party upon the coast, one of the men chosen was a mechanic, and the necessary tools were provided for taking the boats to pieces and putting them together again, in case it should be found necessary so to do. This man was also instructed in the art of blasting rocks, as it was possible that some case might occur in which it might be necessary, in order to open a way for the passage of the boats, to remove some small obstruction by gunpowder.

All the necessary arms, instruments and stores required for such an expedition were carefully provided. The arms were—one large blunderbuss, fourteen carbines with long bayonets attached, and fourteen pistols. Four of these pistols were revolvers, and ten of them had bowie knives attached to them. Each officer was armed with a sword, and all, officers and men, were furnished with belts which contained a supply of ammunition. A small but yet complete collection of mathematical instruments was procured, sufficient for making all necessary measurements and observations, and an abundant camp equipage, consisting of tents, flags, cooking utensils, preserved meats—together with a proper supply of oars, sails, ropes, and every other article which there was any probability that they might require, were all carefully provided, and securely stowed on board the ship which was to convey the party from their native shores to the coast of Palestine. The scene of all these preparations, and the point from which the expedition finally set sail, was the Navy Yard at Brooklyn, New York.

DIFFICULTIES.

Our adventurers soon found themselves beset with very serious difficulties in their attempts to prosecute the object of their expedition. The Arabs that gathered around them were continually watching for opportunities to plunder the camp. A constant watch and guard was thus required on the part of the men, which distracted their attention from their work, and impeded their progress. The trucks, however, were at length landed, and the boats were mounted upon them, and then horses were obtained and harnessed in, in order to draw the boats and the baggage to Acre. The horses, however, were so small, thin and poor, that the harness would not fit to them, and what was worse, when at length some sort of fitting was effected, the useless beasts could not or would not draw the load. The boats were then taken off the trucks and launched again into the water, in order to be sent to Acre across the bay, by sea, while the horses were left to draw the empty trucks along the shore. The beach itself, which was as firm and level as a floor, formed the road, and though there were the mouths of two rivers to cross, the Kishon and the Belus, there were no other obstructions, and thus, partly by water and partly by land, the expedition, and the multifarious effects belonging to it, were finally conveyed to a new rendezvous under the walls of Acre. From their encampment there, the party saw, though not without some sad forebodings, the vessel which had brought them to the coast, hoist her sails, and slowly recede from the shore, until at length she disappeared from view in the western horizon.

Acre is a much larger and more important place than Haïfa, and is the residence of the governor of the province, though, as the anchorage for ships coming into the bay is off the latter place, it was necessary for the expedition to land there. Being now, however, arrived at Acre, an immediate negotiation was entered into with the government for procuring some effectual means of transporting the boats and the baggage across the country to the Galilean sea. After innumerable debates, consultations, and delays, it was at length decided to try the novel experiment of putting camels in harness, to draw the trucks. Every one predicted that this would be a perfectly futile attempt; but so unwilling was Mr. Lynch to take the boats to pieces, if the alternative could possibly be avoided, that he determined to make the experiment. So after experiencing many vexatious difficulties and delays in procuring the camels, and in altering the harnesses, so as to fit the straps and buckles for the new and unexpected function which they were to be required to fulfill, everything was at length in readiness. and the beasts were put in motion. The plan proved perfectly successful. The docile camels were found to be as ready to draw as to carry; and they walked on when commanded by their drivers, with the loaded trucks in train, as steadily and as cheerfully as if they had all their lives been attached to the service of wagons.

THE MARCH.

In marching across the country from Acre to Tiberias, the train of the expedition presented a very singular spectacle. The carriages or trucks, on which the boats were borne, were drawn by three camels each, two being placed abreast, and the third forward as leader. There were also twelve spare camels for the boats, making three relays in all; the plan of the work being to relieve the animals every half-hour. The baggage, including the tents, the oars, the sails, the ammunition, the provisions, and camp equipage of every sort, required eleven camels more, so that in all there were twenty-three of these huge beasts in the caravan. Besides the original party of Americans, there were about fifteen Arabs, all mounted and armed, whom, with their chieftain or sheikh, Mr. Lynch had engaged at Acre, to accompany the expedition as an additional guard. Thus the whole train consisted of twenty-three camels, about eighteen horses, and nearly thirty men. And inasmuch as the men, though differing from each other, were all dressed in some official and picturesque costume, and as the boats which formed the most conspicuous objects in the procession were decorated with flags and banners, the long train, as it advanced across the country, wending its way among the hills, formed a very gay and animating spectacle.

THE CARAVAN.

TIBERIAS.

The place which had been determined upon as the point of embarcation for the boats was the town of Tiberias, which is situated on the western shore of the Sea of Galilee. In fact, this sheet of water is often called the Lake of Tiberias, on account of its having upon its shores this large and important town. For a similar reason it is sometimes called the Lake of Geneseret, the town of Geneseret being situated at the northern extremity of the lake, near where the upper Jordan empties into it. It is somewhat unfortunate for this sea that it has such a multiplicity of names, since the want of any certain and uniform mode of designating it, leads to a great deal of confusion.

The town of Tiberias occupies a very picturesque and commanding position on the shore of the lake. Our party reached it with their boats and all their baggage, in safety, after a journey of three days in crossing the country from Acre. They remained several days at Tiberias before commencing their voyage. This delay was necessary, some considerable time being required at this their ultimate point of departure, for their final preparations. Stores of provisions were to be procured and laid in, the instruments were all to be examined and rectified, and many inquiries were to be made in reference to the geography of the country through which they were going to pass, the character and disposition of the natives, and the course and navigation of the river.

In the course of these preparations Mr. Lynch madė quite an important addition to his flotilla by the purchase of a large wooden boat which he found at Tiberias, and which he thought might be of service to the expedition as a boat of burden. The names of the metallic boats which he had brought with him were the Fanny Mason, and the Fanny Skinner. They were named from two young ladies of Washington, the daughters respectively of Mr. Secretary Mason, and of Commodore Skinner. The wooden boat bought at Tiberias was named the Uncle Sam.

DISCOURAGEMENTS.

Up to this time, and especially while making these preparations at Tiberias for a final embarkation, Mr. Lynch was continually receiving intelligence, information, and advice of the most discouraging and disheartening character. Stories were told him of previous undertakings of a somewhat similar character which had terminated most disastrously. Some travellers had been shot by the Arabs in going down the river, others had died of fevers taken on the low lands through which they passed, or on the shores of the Dead Sea. The river was so rapid, and so obstructed by cataracts and cascades, that it would be impossible that boats of the size which the expedition had provided could navigate it, so that even if the party were to escape the consequences to be feared from the hostility of the natives, they were sure to be overturned in the rapids, or dashed upon the rocks, and all inevitably drowned.

To guard against the possibility that the boats might find it impracticable to navigate the river, Mr. Lynch intended that a detachment of his party should proceed by land along the bank, with camels, so as to succor the boats' crews in case of danger, or to receive them entirely into their caravan in case it should be found necessary to abandon the river. But the owners of the camels that had been employed in drawing the boats from Acre were not willing to hazard their animals in a journey through so lawless a country as that of the Jordan, and some difficulty and delay was experienced in procuring others to take their places. In fact such was the estimation in which the wild and desperate spirit of the natives of the courtry was held, that when at Acre, Mr. Lynch stated to an Arab chieftain that he was going to attempt the passage of the Jordan from the Sea of Galilee down through the valley, the chieftain replied that it was madness to attempt such an undertaking with such a force. "Why, the Bedouins of the Ghor," said he, will eat you all up!"

The Ghor is the Arab name for the valley of the Jordan.

EMBARKATION.

Notwithstanding these discouragements, the preparations were pushed diligently forward, and at length, on the morning of the 10th of April, the expedition embarked. It had been previously organized in two parties, the land and the water party—a regular concert of action having been arranged between the two divisions, and precise orders given to all the various officers in charge, with instructions adapted to every emergency which was at all likely to occur. The several officers who went in the boats, had each his separate duty to perform. One was to take topographical sketches of the shores of the river as he passed along; another was to make geological observations and collect specimens; a third was to note and record the incidents which should occur on the route; while a fourth had charge of the herbarium, and was to make collections of plants and flowers. The land party was under the charge of Lieutenant Dale. It consisted of a large number of persons, many of whom were Arabs that had been employed to accompany the expedition. There were eleven camels and thirty horsemen in the train. The land party were instructed to keep as near the river as the nature of the country would permit. It was not, however, expected that they would be at all times in sight of the river, and a signal was accordingly agreed upon by which they were to be summoned to the boats in case of any emergency or danger requiring their aid. This signal consisted of two musket shots fired in quick succession. Any single report, such as might be expected to be heard from time to time, from shots aimed at wild animals, or signals made to communicate intelligence from one boat to another, they were not to regard.

Every thing being thus arranged, both divisions of the expedition took their departure from Tiberias on the morning of the appointed day. The sun was bright, the air was balmy, the fields were green, and the calm and unruffled water on the lake reflected from its polished surface the green slopes of fertile hills around the shores, and in the centre the beautiful and unbroken blue of the vault of heaven. The long caravan, defiling from the gate of the town, took its way along the shore for a little distance, and then gradually turning inland was soon lost among the hills, while the boats, following each other in a line, and all heavily laden, glided smoothly along their way over the surface of the lake, towards the outlet of the Jordan.

THE NAVIGATION.

The expedition were occupied about eight days in passing down the river from the lake to the Dead Sea. The distance in a direct line is but about sixty miles, though the river is so tortuous and meandering in its course, that the voyage made by the boats was lengthened to more than two hundred miles, by the sinuosities of the stream. The difficulties which the party found they had to encounter in the navigation of the river were far greater even than they had anticipated, although those which proceeded from the savage character and hostile dispositions of the inhabitants were very much less. In fact, the Arabs on the banks did very little to molest the voyagers, while the cascades and cataracts of the stream seemed to be boiling with incessant and uncontrollable rage against them. The current was generally indeed of a moderate rapidity, and the water deep and smooth; and in these cases the progress of the boats was safe and easy. But after a brief interval of this kind of navigation, the current of the river would gradually become more and more rapid, and at length, sweeping round some majestic curve, the foremost boat would enter a wild ravine, where the adventurous navigators would see the whole surface of the water from bank to bank, white with glancing foam, and hear, coming up from below, through the gorge into which the river was pouring, the sound of a roaring cataract, warning them of the approaching danger. In such cases, the crew would strive with all their strength to guide the boats into the swiftest water. For in such cases the swiftest current always indicated the deepest channel; and thus, as often happens, the only hope of safety lay in the most bold advance into the midst of the danger. In the swiftest of these cascades the power of the oars over the boats was not sufficient to keep them in the channel, and in such cases, at a command from the officer, the crews would leap overboard into the water, and clinging to the gunwales of the boats, they would struggle to keep them in the swiftest and darkest part of the current. In doing this, they would of course be borne along themselves, irresistibly, by the surging water, finding sometimes a momentary and precarious footing upon submerged rocks, and sometimes sinking beyond their depth in the boiling and foaming whirlpools. Having been thus swept down to the foot of the rapids, the men would clamber back dripping into the boats, and after a brief respite to recover breath, they would resume their oars, and go on as before.

THE CASCADES.

In some places the fall was too great for even this mode of descent, and then a grapnel would be sunk to serve for an anchor, and the boat, controlled by a strong line from the grapnel, would be let down gradually — the seamen slowly delivering out the line from her stern. Where the bottom of the river was such that a grapnel could not be used, some tree, or firmly-rooted bush, growing upon the banks, would be made use of instead, as a point of support. Notwithstanding all these precautions, however, the boats were continually striking on the rocks, and receiving the most severe concussions. At one time the Fanny Mason being in advance of the others, and going down a swift descent, struck upon a rock and lodged there in the middle of the channel. The company on board were in great alarm, for Uncle Sam was just behind, and was coming down upon them with all the force of the current. The crew of the wooden boat did all in their power to prevent a collision, but in vain. On the whole it was fortunate that they did not succeed, for the shock of the concussion forced the lodged boat off the rock into deep water; and then both drifted away safely down the stream together.

The METALLIC BOATS, it was found, endured the thumps and contusions which they received, with very little damage; but the wooden boat, though heavy and strong, was found wholly incapable of sustaining such service. She became so much bruised and battered by the first two days voyage, as to make it evident that it would not be possible to keep her long afloat, and accordingly on the morning of the *third* day she was abandoned.

HARDSHIPS.

Of course in such a service as this the whole company, both officers and men, endured every conceivable degree of hardship and exposure. The men were sometimes compelled to work for four or five hours immersed to their waists in water, and engaged all the time in lifting, pushing, pulling, and in other similar toils, requiring the almost incessant exertion of their utmost strength. Sometimes they were obliged to unload the boats and land the cargoes on the shore, and then, after floating the empty boats down the rapids, they would transport the heavy packages on their backs along the rocky strand to some new point of embarkation below. In one or two cases they were obliged to leave the river altogether, and transport the boats *round* certain dangerous cascades, by means of some ancient sluiceway that had been constructed in former times for the purpose of supplying water to a mill. They would float the boats along these sluiceways, which lay of course upon the banks of the river and parallel to the stream, until they had reached the lower end, and then, discharging the cargo, they would drag the boats, and carry the cargo down the bank into the river again, where, after having put the effects once more on board, they would re-embark and proceed as before. When they were in the boats, and on the river, the intervals were very few in which they could relax their vigilance or enjoy anything like rest. The circuitous windings of the stream were continually bringing them into new scenes and exposing them to new dangers. Sunken rocks and hidden shoals were to be watched for and guarded against, continual exertion at the oars was required to keep the boats in the centre of the channel, and in a position parallel with the direction of the current; and sudden and unexpected occurrences arose from time to time, bringing new and wholly unlooked-for dangers. At one time, for example, after having just cleared a dangerous rapid, and got, as they imagined, beyond the danger, they were carried rapidly round a curve of the river under a mass of low, overhanging branches, which lay so close to the water, that they threatened to sweep the men out of the boats, as they were whirled swiftly along beneath them.

Sometimes the party in the boats spent the whole day without seeing anything of their comrades in the caravan, though it was arranged generally that the two divisions of the expedition should meet at night. The scene of the encampment in such cases presented a very exciting and animating spectacle. The place selected was usually some smooth and level spot on the bank of the river, sheltered if possible by a wood, and easily accessible both from the water and the wood. Here for an hour there was presented a very picturesque and busy scene. Some of the men were employed in mooring the boats on the shore, and in mounting the blunderbuss for their protection. Others were engaged in raising the numerous tents, and driving the tent pins into the ground to secure them, while the wearied camels stood patiently by, waiting to be disburdened. On some neighboring elevation, reconnoitrers, Arab or American, were to be seen scrutinizing the country all round, to watch for any indications that might exist of the presence of an enemy, while other officers appointed for the purpose, were riding over the plain, stationing the outposts for the night. When the tents were pitched the baggage was collected, and piled securely in the centre of the inclosure which they formed, and then supper was prepared. After supper the sentinels were posted, the bustle and movement gradually subsided, and the whole encampment became a scene of silence and repose.

Extracts.

From the Report of the Secretary of the Navy to the Congress of the United States, being portions of a Report made by Lieut. W. F. Lynch, U. S. N. of an Exploration of the Dead Sea.

U. S. Store-ship Supply, *November*, 1848.

To the Hon. J. Y. Mason,
Secy. U. S. N., Washington, D. C.:

I have the honor to report that, in obedience to your order of September 30th, 1847, I assumed the command of this ship on the 2nd day of October following.

By your special order I obtained two of Francis' Metallic Life-boats, and while the ship was being equipped, procured the various articles deemed necessary for the successful result of the contemplated attempt to descend the Jordan, and explore the Dead Sea.

On the afternoon of March 31st, 1847, we succeeded in landing the boats and all our effects. The next day we transported them to the banks of the River Belus, near Acre, where we pitched our tents that evening.

While encamped near Acre, we heard the most alarming accounts of the hostile spirit of the Arab tribes on each bank of the Jordan,—these were, in a measure, confirmed by a party of American travellers, who had been attacked two nights previous under Mount Tabor,—but I had full confidence in our resources. Our route was over high mountain ridges, and through deep and seemingly impassable gorges, but we succeeded, and on the 8th launched the boats upon the placid waters of the Lake Tiberias.

For the purpose of economy in the transportation of stores, I purchased a frame boat, the only one of any kind on the lake.

On Monday, April 10th, at 2.30 P. M., we started. After leaving the lake, we passed the village of Semakh on the left, and soon came to the ruins of a bridge of the same name. The fragments of the bridge entirely obstructed the channel, except a narrow place towards the left bank, where the pent up water found an issue, and ran in a sluice among the scattering masses of stone. After reconnoitering the rapid we shot down the sluice,—the leading boat was whirled against a rock, where she hung for a few moments, but was got off without damage.

Tuesday, April 11th.—We started at 8.40 P. M., the current at first two knots per hour, but increasing as we advanced, until we came to where the river, for more than 300 yards, was one foaming rapid, a number of fishing weirs, and the ruins of another ancient bridge obstructing the passage. After five hours' severe labor we got the boats through,—the metallic ones without injury, but the frame one so battered and strained that she sunk shortly after, and we were obliged to abandon her. *Had our other boats been of wood, they would have shared the same fate.* A blow that only indents a metallic boat, would fracture a wooden one.

Shortly after leaving the last ruined bridge, we descended a cascade, at an angle of 60 degrees, at the rate of 12 knots, and immediately after, down a shoal rapid, where we struck and hung for a few moments upon a rock. We have to-day descended one cascade and seven rapids,—three large, and four small ones.

Wednesday, April 12th.—At day-break examined the whirl-pool and rapids. Descended the first rapid, and at 11.05 shot through the whirl-pool, and down a desperate looking cascade of eleven feet. At 12 we stopped to rest, and at 45', P. M., started again,—and 1, P. M., completed the descent of the third rapid since morning. Near sunset, we descended the most frightful rapid we had yet encountered, and, after passing down two others, arrived at 6.30, P. M., at Jir Mejami, (a bridge of the place of meeting,) and shooting through the main arch, descended about two hundred yards of the shallow rapid, when, it becoming too dark to proceed, we hauled to the right bank and made fast for the night.

We to-day descended two cascades, and six rapids, four large and two small ones. The current has been rarely less than four, and sometimes, down the rapids, as much as twelve knots per hour.

Thursday, April 13th.—Succeeded in getting the boats safely down the rapids uninjured, save a few indentations in their bilge. As we would this day approach the Lower Ghor, which is traversed by hostile tribes, to be prepared, I mounted our heavy blunderbuss on the bow of the leading boat.

At 10.40, *descending an ugly, brawling. shelving rapid, she struck on a rock just beneath the surface of the water, and broaching, broadside on, was thrown upon her bilge*—taking in a great quantity of water—but all hands jumping overboard, her combined strength and buoyancy carried her safely over, though for some minutes we feared she would go to pieces.

The river to-day varied from five to six knots velocity of current; we descended twelve rapids, three of them formidable ones.

Friday, April 14th.—The boats, this morning, had little need of oars to propel them, the current carrying them down at the rate of four knots per hour. The width of the river has varied from seventy yards, and two knots current, to thirty yards, with six knots current. We struck three times upon sunken rocks to-day, and the last time nearly lost the leading boat.

Saturday, 15th April.—We started at 8.24 A. M., and at 9.34, passed an ugly rapid by Waddy Malakin, (ravine of salt,) with a small stream of brackish water running down.

Monday, 17th April.—We started at 6.25 A. M., the river 40 yards wide and 7 feet deep, flowing at the rate of six knots, with much drift-wood in the stream, many large trees, some of them recently uprooted. At 4.52 we passed down wild and dangerous rapids, sweeping by the base of a perpendicular hill.

Tuesday, April 18th.—At 3, A. M., we were roused with the intelligence that the pilgrims were coming, and were obliged to move our tents a little higher up. In respect for the sanctity of the place, the boats were moored lower down on the opposite side, but kept in readiness to rescue any of the pilgrims who might be in danger of drowning.

At 1.45 P. M., started with the boats for Ain el Feshkah, (fountain of the stride,) on the northwest shore of the Dead Sea, a few hours distant. At 3.25 P. M., passed by the extreme point, where the Jordan is 180 yards wide, and 3 feet deep, and entered the Dead Sea. As we rounded the point, a fresh northwest wind was blowing, which soon freshened into a gale, and caused a heavy sea, in which the boats labored excessively. The spray was painful to the eyes and skin, and, evaporating as it fell, left incrustations of salt upon our faces, hands, and clothing.

Wednesday, April 19th.—We noticed an entire absence of sea-shells or of round pebbles upon the beach, which was covered with minute fragments of flint, and the foot-prints we made at landing, were, at our return, an hour after, encrusted with salt.

Made arrangements for camels to transport the boats in sections across Jaffa, via Jerusalem.

It gratifies me to state that the boats are in almost as good a condition as when we received them.

The above reference to the "flinty shore,"—the "foot-print" so soon covered with salt,—the transport of the boats in sections, show, that although hauled on such a beach every night covered with sharp flint, and being constantly in such salt water as that sea, and roughly transported in sections, were not destroyed, but returned in almost as good condition as when new.

From Capt. W. F. Lynch.

March 19*th*, 1849.

If in any way I can serve you by making known the excellent qualities of your Metallic Life-boats, I feel bound to do so, *for with no other kind of boat, however strongly constructed, could the descent of the Jordan have been accomplished*, and the expedition must have been unsuccessful without them.

To Joseph Francis, Esq.

From Joseph C. Thomas, Esq.

Extract of a Letter from Joseph C. Thomas, one of the Dead Sea Expedition, March 19*th*, 1849.

Being one of the party attached to the "Dead Sea Expedition," under Lieut. Lynch, I would state, that but for the Metallic Life-boats, we never could have accomplished the descent of the River Jordan. *No other kind of boat could have bounded over rocks and down such deep and dangerous rapids.* To these boats we owe our lives, for, had they failed, *as did the one wooden boat* we had, we must have been thrown on the shore, and been murdered by the hostile Arabs, and the whole expedition have failed.

Joseph Francis, Esq.

The interresting narrative of the expedition to the Dead Sea, reflecting, as it does, honor upon those who conceived the enterprise—upon our government in giving it aid, and lasting praise and distinction upon those who so successfully executed the mission—makes the contrast still more striking, as we turn from it, and contemplate the painful scene of the wreck of the "Mexico," as given in the subjoined description. This took place before government had lent its encouragement to our Life saving coast arrangements, and we cannot help picturing to ourselves what would have been the fate of the passengers by this unfortunate vessel, had the means now provided for like disasters, then been in readiness for their relief,—no possible succor to reach them from the shore, and worse than all, no provision made by themselves upon which to rely. Had they been furnished with Metallic Life-boats, how different might have been their fate. The following is a recital of *facts*, and the subject of which we thus treat is one fraught with too much interest to permit of drawing upon our fancy for a tale of sadness. If it was not for extending this work beyond what it was originally contemplated, (a pamphlet,) we could give the particulars of many a shipwreck and disaster, the thoughts of which would cause the blood to chill, and the heart sicken, over the sufferings of those who so perished; but thanks to the wisdom, progress and benevolence of the present age, means are now being provided, so far as human skill can go, to prevent the cause of such sad occurrences.

The Wreck of the Mexico.

The following extract of a letter, writen to the editor of the *Boston Mercantile Journal*, gives an affecting description of the appearance after death of the unfortunate individuals who were lost in the barque Mexico, lately shipwrecked on the Long Island beach.

"On reaching Hempstead, I concluded to go somewhat off the road, to look at the place where the ship Mexico was cast away. In half an hour we came to Lott's tavern, some four or five miles this side of the beach where the ship lay—and here, in his barn, had been deposited the bodies of the ill-fated passengers which had been thrown upon the shore. I went out to the barn. The doors were open, and such a scene as presented itself to my view, I certainly could never have contemplated. It was a dreadful—a frightful scene of horror.

Forty or fifty bodies, of all ages and sexes, were lying promiscuously before me, over the floor, all frozen and as solid as marble—and all except a few, in the very dresses in which they perished. Some with their hands clenched, as if for warmth, and almost every one with an arm crooked, and bent as it would be in clinging to the rigging.

There were scattered about among the number, four or five beautiful little girls, from six to sixteen years of age, their cheeks and lips as red as roses, with their calm blue eyes open, looking you in the face as if they would speak. I could hardly realize that they were dead. I touched their cheeks, and they were frozen as hard and as solid as a rock, and not the least indentation could be made by the pressure of the hands. I could perceive a resemblance to each other, and supposed them to be daughters of a passenger named Pepper, who perished, together with his wife and all his family.

On the arms of some were to be seen the impression of the rope which they had clung to—the mark of the twist deeply sunk into the flesh. I saw one poor negro sailor, a tall man, with his head thrown back, his lips parted, and his now sightless eye-balls turned upwards, and his arms crossed over his breast, as if imploring heaven for aid. The poor fellow had evidently frozen while in the act of fervent prayer.

One female had a rope tied to her leg, which had bound her to the rigging—and another little fellow had been crying and thus frozen, with the muscles of the face just as we see children when crying. There was a brother and sister dashed upon the beach locked in each other's arms; but they had been separated in the barn. All the men had their lips firmly compressed together, and with the most agonizing expression on their countenance that I ever beheld.

A little girl had raised herself on tiptoe, and thus was frozen just in that position It was an awful sight! and such a picture of horror was before me, that I became unconsciously fixed on the spot, and found myself trying to suppress my ordinary breathing, lest I should disturb the reposc of those around me. I was aroused from the reverie by the entrance of a man—the coroner.

As I was about to leave, my attention became directed to a girl, who, I afterwards learned, had come that morning from the city to search for her sister. She had sent for her to come over from England, and had received intelligence that she was in that ship. She came into the barn, and the second body she cast her eyes upon was hers. She gave way to such a burst of impassionate grief and anguish that I could not behold her without sharing her feelings. She threw herself upon the cold and icy face and neck of the lifeless body, and thus, with her arms around her, remained wailing, moaning and sobbing, till I came away—and when some distance off, I could hear her calling her by name in the most frantic manncr.

So little time, it appears, had they to prepare for their fate, that I perceived a bunch of kcys and a half eaten cake, fall from the bosom of a girl whom the coroner was removing. The cake appeared as if part of it had just been bittcn and hastily thrust into her bosom, and round her neck was a ribbon with a pair of scissors attached.

And to observe the stout, rugged sailors, too, whose iron frames could endure so much hardship, here they lay—masses of ice. Such scenes show us indeed how powerless and feeble are all human efforts, when contending against the storms and tempest which sweep with resistless violence over the face of the deep. And yet the vessel was so near the shore, that the shrieks and moans of the poor creatures were heard through that bitter, dreadful night, till towards morning, the last groan died away, and all was hushed in death, and the murmur of the raging billows was all the sound that then met the ear.

After the storm the wreck was approached, and here and there were seen columns, pillars of ice, which had formed on the frozen bodies, as the sea broke over them."

DIRECTIONS

FOR USING THE

LIFE-SAVING APPARATUS,

WHICH IS AT THE SEVERAL SURF-BOAT STATIONS ON THE

Coast of Long Island and Fisher's Island, New York; Watch Hill, R. I.; and along the Coast.

TO THROW A LINE WITH A SHOT AND MORTAR.

First wipe the chamber and bore of the mortar clean, and clear the vent with the priming-wire, then raise the muzzle and put in the powder, measured by filling the top of the cannister; wipe the shot clean, and place it in the mortar, with the eye up, taking great care to keep the SPIRAL turns in the wire which is attached to it, for on that depends the sweep of throwing the line to the stranded vessel. Then dig away the sand, until the bed of the mortar lies LEVEL. This gives the piece twenty degrees elevation, and is the best angle for throwing 350 yards.

Point the mortar in line with the weather rail, if the vessel lies "*head on*," and the wind along the beach, but for the "MAIN MAST" if the wind is blowing on shore.

Make the line fast to the *wire*, and lay 20 or 30 yards of it in front of the mortar, or to the water's edge; put in a QUICK MATCH and fire, taking care to stand by the SIDE of the mortar, and not BEHIND it.

The box with the line should be placed eight or ten yards in front, and about two yards aside.

TO PREPARE THE SMALL LINE.

Coil it from one pin to the opposite one on the "COILING FRAME," until there is one turn on each pin, then CROSS IT in the same manner, and continue to do so until the whole is coiled, and take care to keep it SLACK enough to slip off the pins when you turn them down into the box, which will require three persons, as care must be taken to have all the line leave the pins at the same time as near as possible.

There are two shots of Rocket-line, each 310 yards long; and if the stranded vessel is at a greater distance than 300 yards from the beach, both lines must be bent together, and one table-spoonful of powder added to the charge, with a piece of thin paper laid over it, and the shot put in while the muzzle is up, as much of the force is lost if the powder is not kept in the chamber of the piece. Much care should be taken to have the end of the small line made fast before turning it off the pins into the box, or both shot and line may be lost.

TO USE A ROCKET.

Point the "range" so as to be in line with the mast heads, and for the weather side of the vessel; secure the "crotch and range" well in the sand; secure the rocket to the staff with the small wire, then place it in the range." Bend on the small line, and place the box in which it is coiled directly behind the "range;" put the quick match in the vent of the rocket, and touch it with your match.

TO SEND A HAWSER AND LIFE-CAR.

The small line having been thrown to the vessel, bend on the hauling-line, and when the persons on board the ship get hold of it, reeve the end of the hawser through the rings of the Metallic Life-car, and secure the end to the small line, and let them haul the hawser on board; then put on your tackles and haul it tight, and make use of the small line for hauling the Car off and on. Should the cold be severe, it would be better to send a person from the shore to the ship, in the Life-car; he holding the door down himself by the handle on the under side, as he could manage matters more promptly than persons suffering from exposure.

TO USE THE MATCH ROPE.

Let it be well lighted, and it will then burn at the rate of about three inches per hour. If there is any objection to standing beside the mortar when it is fired, some powder may be moistened in the hand, and worked into a stiff paste, which will stick to the top of the quick match, and will burn a sufficient time to allow the person who fires it to go from the piece.

When the mortar is not in use, the chamber should be kept filled with oil, and the bore to be oiled at least once a month.

The Powder Canister should be kept with the top carefully screwed on, and the tin boxes containing the Rockets, &c., be kept closed.

If the apparatus be used at night, a "*blue light*" should be burned before firing, so that the persons on board the ship can see what you are preparing to do. This light can be held in the hand, and in such position as best to show the apparatus.

It is to be lighted by taking off the tin cap, and striking the top against any hard substance.

Very respectfully yours,
Joseph Noyes,
Lt. U. S. R. Service.

The persons who are entrusted with the care of the Life-Saving Apparatus are particularly requested not to permit any of the articles to be used or expended, except for the preservation of life and property from shipwreck.

WALTER R. JONES, President.
BACHE M'EVERS, Vice President.
JOHN D. JONES, Secretary.
ROBERT C. GOODHUE, Treasurer.

TO REPAIR "METALLIC BOATS."

This is a simple operation, for if by repeated bending back or forth the bottom is cracked or broken, place a piece of wood over the inside, and nail through from the outside, having first put paint or flannel between.

A piece of common sheet-iron or tin may be applied to a hole punched through a boat. A nail sharpened answers for a punch, and common nails for rivets. If bruised or bent by concussion, apply a common hammer or mallet to knock it to place. Such temporary means to repair may be resorted to at sea, or where machines are not at hand.

Any common sheet-iron or tin-worker can repair as well as the manufacturer of the boat. Metal boats can be placed in the *hottest* place, as by exposure to heat for months or years; the paint becomes hard and durable.

THE STEAMBOAT LAW.

AN ACT

TO AMEND AN ACT ENTITLED "AN ACT TO PROVIDE FOR THE BETTER SECURITY OF THE LIVES OF PASSENGERS ON BOARD OF VESSELS PROPELLED IN WHOLE OR IN PART BY STEAM, AND FOR OTHER PURPOSES."

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That no license, register, or enrollment, under the provisions of this or the act to which this is an amendment, shall be granted, or other papers issued by any collector, to any vessel propelled in whole or in part by steam, or carrying passengers, until he shall have satisfactory evidence that all the provisions of this act have been fully complied with; and if any such vessel shall be navigated, with passengers on board, without complying with the terms of this act, the owners thereof and the vessel itself shall be subject to the penalties contained in the second section of the act to which this is an amendment.

SEC. 2. *And be it further enacted,* That it shall be the duty of the inspectors of the hulls of steamers and the inspectors of boilers and engines, appointed under the provisions of this act, to examine and see that suitable and safe provisions are made throughout such vessel to guard against loss or damage from fire; and no license or other papers on any application shall be granted if the provisions of this act for preventing fires are not complied with, or if any combustible material liable to take fire from heated iron, or any other heat generated on board of such vessels in and about the boilers, pipes, or machinery, shall be placed at less than eighteen inches distant from such heated metal or other substance likely to cause ignition, unless a column of air or water intervenes between such heated surface and any wood or other combustible material so exposed, sufficient at all times, and under all circumstances, to prevent ignition; and further, when wood is so exposed to ignition, as an additional preventive, it shall be shielded by some incombustible material in such manner as to leave the air to circulate freely between such material and the wood. *Provided, however,* That when the structure of such steamers is such, or the arrangement of the boilers or machinery is such that the requirements aforesaid cannot, without serious inconvenience or sacrifice, be complied with, inspectors may vary therefrom, if in their judgment it can be done with safety.

Sec. 3. *And be it further enacted,* That every vessel so propelled by steam, and carrying passengers, shall have not less than three forcing pumps with chambers at least four inches in diameter, two to be worked by hand and one by steam, if steam can be employed, otherwise by hand; one whereof shall be placed near the stern, one near the stem, and one amidship; each having a suitable, well fitted hose, of at least two-thirds the length of the vessel, kept at all times in perfect order and ready for immediate use; each of which pumps shall also be supplied with water by a pipe connected therewith, and passing through the side of the vessel, so low as to be at all times in the water when she is afloat: *Provided,* That in steamers not exceeding two hundred tons measurement, two of said pumps may be dispensed with, and in steamers of over two hundred tons, and not exceeding five hundred tons measurement, one of said pumps may be dispensed with.

Sect. 4. *And be it further enacted,* That every such vessel, carrying passengers, shall have at least two good and suitable boats supplied with oars, in good condition at all times for service, one of which boats shall be a life-boat made of metal, fire proof, and in all respects a good, substantial, safe sea boat, capable of sustaining, inside and outside, fifty persons, with life-lines attached to the gunwale, at suitable distances. And every such vessel of more than five hundred tons, and less than eight hundred tons measurement, shall have three life-boats, and every such vessel of more than eight hundred tons and less than fifteen hundred tons measurement, shall have four life-boats—and every such vessel of more than fifteen hundred tons measurement, shall have six life-boats—all of which boats shall be well furnished with oars and other necessary apparatus: *Provided, however,* The inspectors are hereby authorized to exempt steamers navigating rivers only from the obligation to carry the life-boat herein provided, for more than one, the same being of suitable dimensions, made of metal and furnished with all necessary apparatus for use and safety—such steamers having other suitable provisions for the preservation of life in case of fire or other disaster.

SECT. 5. *And be it further enacted,* That every such vessel, carrying passengers, shall also be provided with a good life-preserver made of suitable material, and float well adapted to the purpose, for each and every passenger, which life-preservers and floats shall always be kept in convenient and accessible places in such vessel and in readiness for the use of the passengers; and every such vessel shall also keep twenty fire-buckets and five axes, and there shall be kept on board every such vessel exceeding five hundred tons measurement, buckets and axes after the rate of their tonnage, as follows: on every vessel of six hundred tons measurement, five buckets and one axe for each one hundred tons measurement, decreasing this proportion as the tonnage of the vessel increases, so that any such vessel of thirty-five hundred tons, and all such vessels exceeding the same shall not be required to keep but three buckets for each one hundred tons of measurement, and but one axe for every five buckets.

SECT. 6. *And be it further enacted,* That every such vessel carrying passengers on the main or lower deck, shall be provided with sufficient means convenient to such passengers for their escape to the upper deck in case of fire or other accident endangering life.

SECT. 7. *And be it further enacted,* That no loose hemp shall be carried on board any such vessel; nor shall baled hemp be carried on the deck or guards thereof, unless the bales are compactly pressed and well covered with bagging or a similar fabric; nor shall gunpowder, oil of turpentine, oil of vitriol, camphene, or other explosive burning fluids, or materials which ignite by friction, be carried on board any such vessel as freight, except in cases of special license for that purpose as hereinafter provided; and all such articles kept on board as stores shall be secured in metallic vessels; and every person who shall knowingly violate any of the provisions of this section, shall pay a penalty of one hundred dollars for each offence, to be recovered by action of debt in any court of competent jurisdiction.

SEC. 8. *And be it further enacted,* That hereafter, all gunpowder, oil of turpentine, oil of vitriol, camphene, or other explosive burning fluids, and materials which ignite by friction, when packed or put up for shipment on board of any such vessel, shall be securely packed or put up separately from each other, and from all other articles, and the package, box, cask or vessel containing the same, shall be distinctly marked on the outside with the name or description of the articles contained therein; and every person who shall pack or put up, or caused to be packed or put up for shipment on board of any such vessel, any gunpowder, oil of turpentine, oil of vitriol, camphene or other explosive burning fluids, or materials which ignite by friction, otherwise than as aforesaid, or shall ship the same, unless packed and marked as aforesaid, on board of any steam-vessel carrying passengers, shall be deemed guilty of a misdemeanor, and punished by a fine not exceeding one thousand dollars, or imprisonment not exceeding eighteen months, or both.

SEC. 9. *And be it further enacted,* That instead of the existing provisions of law for the inspection of steamers carrying passengers and their equipment, and instead of the present system of pilotage of such vessels, and the present mode of employing engineers on board the same, the following regulations shall be observed, to wit: The collector, or other chief officer of the customs, together with the supervising inspector for the district, and the Judge of the District Court of the United States for the district in each of the following collection districts—namely, New Orleans and St. Louis, on the Mississippi river; Louisville, Cincinnati, Wheeling and Pittsburg, on the Ohio river; Buffalo and Cleveland, on lake Erie; Detroit, upon Detroit river; Nashville, upon the Cumberland river; Chicago, on Lake Michigan; Oswego, on Lake Ontario; Burlington, in Vermont; Galveston, in Texas; and Mobile, in Alabama; Savannah, in Georgia; Charleston, in South Carolina; Norfolk, in Virginia; Baltimore, in Maryland; Philadelphia, in Pennsylvania; New York, in New York; New London, in Connecticut; Providence, in Rhode Island; Boston, in Massachusetts; Portland, in Maine; and San Francisco, in California—shall designate two inspectors, of good character and suitable qualifications to perform the services required of them by this act, within the respective districts for which they shall be appointed; one of whom, from his practical knowledge of ship-building, and the uses of steam in navigation, shall be fully competent to make a reliable estimate of the strength, sea-worthiness, and other qualities of the hulls of steamers and their equipment, deemed essential to safety of life when such vessels are employed in the carriage of passengers, to be called the Inspector of Hulls; the other of whom, from his knowledge and experience of the duties of an engineer employed in navigating vessels by steam, and also in the construction and use of boilers, and the machinery and appurtenances therewith connected, shall be able to form a reliable opinion of the quality of the material, the strength, form, workmanship and suitableness of such boilers and machinery to be employed in the carriage of passengers, without hazard to life from imperfections in the material, workmanship, or arrangement of any part of such apparatus for steaming, to be called the Inspector of Boilers; and these two persons, thus designated, if approved by the Secretary of the Treasury, shall be, from the time of such designation, inspecttors, empowered and required to perform the duties herein specified, to wit:

First. Upon application in writing by the master or owner, they shall, once in every year at least, carefully inspect the hull of each steamer belonging to their respective districts and employed in carriage of passengers, and shall satisfy themselves that every such vessel, so submitted to their inspection, is of a structure suitable for the service in which she is to be employed, has suitable accommodations for her crew and passengers, and is in a condition to warrant the belief that she may be used in navigation as a steamer, with safety to life, and that all the requirements of law in regard to fires, boats, pumps, hose, life-preservers, floats, and other things, are faithfully complied with; and if they deem it expedient, they may direct the vessel to be put in motion, and may adopt any other suitable means to test her sufficiency and that of her equipment.

Second. They shall also inspect the boilers of such steamers before the same shall be used, and once in every year thereafter, subjecting them to a hydrostatic pressure, the limit to which, not exceeding one hundred and sixty-five pounds to the square inch for high pressure boilers, may be prescribed by the owner or the master, and shall satisfy themselves by examination and experimental trials, that the boilers are well made of good and suitable material; that the openings for the passage of water and steam respectively, and all pipes and tubes exposed to heat are of proper dimensions, and free from obstruction; that the spaces between the flues are sufficient, and that the fire line of the furnace is below the prescribed water line of the boilers; and that such boilers, and the machinery and the appurtenances, may be safely employed in the service proposed in the written application, without peril to life; and shall also satisfy themselves that the safety-valves are of suitable dimensions, sufficient in number, well arranged, and in good working order, (one of which may, if necessary in the opinion of the inspectors to secure safety, be taken wholly from the control of all persons engaged in navigating such vessels;) that there is a suitable number of guage-cocks properly inserted, and a suitable water guage and steam guage indicating the height of the water and the pressure of the steam; that in or upon the outside flue of each outside high-pressure boiler, there is placed in a suitable manner alloyed metals, fusible by the heat of the boiler when raised to the highest working pressure allowed, and that in or upon the top of the flues of all other high-pressure boilers in the steamer, such alloyed metals are placed as aforesaid, fusing at ten pounds greater pressure than said metals on the outside boilers, thereby, in each case, letting steam escape; and that adequate and certain provision is made for an ample supply of water to feed the boilers at all times, whether such vessel is in motion or not, so that in high-pressure boilers the water shall not be less than four inches above the flue: Provided, however, in steamers hereafter supplied with new high-pressure boilers, if the alloy fuses on the outside boilers at a pressure of ten pounds exceeding the working pressure allowed, and at twenty pounds above said pressure on the inner boilers, it shall be a sufficient compliance with this act.

Third. That in subjecting to the hydrostatic test, aforesaid, boilers called and usually known under the designation of high-pressure boilers, the inspector shall assume one hundred and ten pounds to the square inch, as the maximum pressure allowable as a working power for a new boiler forty-two inches in diameter, made of iron plates as herein required, at least one-fourth of an inch thick, in the best manner and of the quality herein required, and shall rate the working power of all high-pressure boilers, whether of greater or less diameter, old or new, according to their strength compared with this standard —and in all cases the test applied shall exceed the working power allowed, in the ratio of one hundred and sixty-five to one hundred and ten, and no high-pressure boilers hereafter made shall be rated above this standard: and in subjecting the test, aforesaid, that class of boilers usually designated and known as low-pressure boilers, the said inspectors shall allow as a working power of each new boiler a pressure of only two-thirds the number of pounds to the square inch to which it shall have been subjected to the hydrostatic test and found to be sufficient therefor, using the water in such tests at a temperature not exceeding sixty degrees Fahrenheit; but should such inspectors be of the opinion that said boiler, by reason of its construction or material, will not safely allow so high a working pressure, they may, for reasons to be stated specifically in their certificate, fix the working pressure of said boiler at less than two-thirds of said test pressure, and no low pressure boiler hereafter made shall be rated in its working pressure above the aforesaid standard: *And Provided,* That the same rules shall be observed in regard to boilers heretofore made, unless the proportion between such boilers and the cylinders, or some other cause, renders it manifest that its application would be unjust, in which case the inspectors may depart from these rules if it can be done with safety; but in no case shall the working pressure allowed exceed the hydrostatic test, and no valve, under any circumstances shall be loaded or so managed, in any way, as to subject a boiler to a greater pressure than the amount allowed by the inspectors; nor shall any boiler or pipe be approved which is made in whole or part of bad material, or is unsafe in its form, or dangerous from defective workmanship, age, use, or any other cause.

Fourth. That when the inspection in detail is completed, and the inspectors approve of the vessel and her equipment throughout, they shall make and subscribe a certificate to the collector of the district, substantially as follows:—

State of District of

Application having been made in writing by to the subscribers, inspectors of said district, to examine the steamer of whereof are owners, and is master; we having performed that service, now, on this day of A.D. do certify, that she was built in the year , is in all respects staunch, seaworthy, and in good condition for navigation, having suitable means of escape in case of accident from the main to the upper deck, that she is provided with [here insert the number of state-rooms, the number of berths therein, the number of other permanent berths for cabin passengers, the number of berths for deck or other classes of passengers, the number of passengers for each class for whom she has suitable accommodations, and in case of steamers sailing to or from any European port, or to or from any port on the Atlantic or the Pacific, a distance of one thousand miles or upwards, and the number of each whom she is permitted to carry, and in case of a steamer sailing to any other port, a distance of five hundred miles or upwards, the number of deck passengers she is permitted to carry—also the number of boilers and the form, dimensions and material of which each boiler is made, the thickness of the metal and when made—if after this act takes effect, and of iron, whether they are such in all respects as the act requires, whether each boiler has been tried by hydrostatic test, the amount of pressure to the square inch in pounds applied to it, whether the amount allowed as the maximum working power was determined by the rule prescribed by this act, if not, the reason for a departure from it, also the number of safety valves required, their capacity, the load prescribed for each valve, how many are left in the control of the persons navigating the vessel, whether one is withdrawn, and the manner of securing it against interference; also the number and dimensions of supply pipes, and whether they and the other means provided are sufficient at all times and all circumstances, when in good order, to keep the water up four inches at least above the top of the flue, also the number and dimensions of the steam pipes; the number and kind of engines; the dimensions of their cylinders; the number and capacity of the forcing pumps and how worked; the number and kind of gauge-cocks, water and steam gauges, where situate and how secured; also the manner of using alloyed metals and the pressure at which they are known by the inspectors to fuse; the equipments for the extinguishment of fires, including hose, fire-buckets and axes; the provisions for saving life in case of accident, including boats, life-preservers, and substitutes therefor, where kept, and all other provisions made on board for the security of the lives of passengers.] And we further certify, that the equipment of the vessel throughout, including pipes, pumps, and other means to keep the water up to the points aforesaid, hose, boats, life-preservers and other things, is in conformity to the provisions of law; and that we declare it to be our deliberate conviction, founded upon the inspection which we have made, that the vessel may be employed as a steamer upon the waters named in the application, without peril to life from any imperfection of form, materials, workmanship, or arrangement of the several parts, or from age or use. And we further certify that said vessel is to run within the following limits, to wit: from to and back, touching at intermediate places.

And which certificate shall be verified by the oaths of the inspectors signing it, before a person competent by law to administer oaths; and in case the said inspectors do not grant a certificate of approval, they shall state in writing, and sign the same, their reasons for their disapproval.

Fifth. Upon the application of the master or owner of any steamer employed in the carriage of passengers, for a license to carry gunpowder, oil of turpentine, oil of vitriol, camphene, or other explosive burning fluids and materials which ignite by friction, or either of them, the inspectors shall examine such vessel, and if they find that she is provided with chests or safes composed of metal, or entirely lined therewith, or one or more apartments thoroughly lined with metal at a secure distance from any fire, they may grant a certificate to that effect, and authorizing such vessel to carry as freight any of the articles aforesaid, those of each description to be secured in such chest, safe or apartment containing no other article, and carried at a distance from any fire to be specified in the certificate: *Provided,* That any such certificate may be revoked or annulled at any time by the inspectors, upon proof that either of the said articles have been carried on board said vessel, at a place or in a manner not authorized by such certificate, or that any of the provisions of this act in relation thereto have been violated.

Sixth. The said inspectors shall keep a regular record of certificates of inspections of vessels, their boilers, engines and machinery, whether of approval or disapproval, and when recorded, the original shall be delivered to the collector of the district; they shall keep a like record of certificates, authorizing gunpowder, oil of turpentine, oil of vitriol, camphene or other explosive burning fluids and materials which ignite by friction, or either of them to be carried as freight, by any such vessel, and when recorded deliver the originals to said collector; they shall keep a like record of all licenses to pilots and engineers, and all revocations thereof, and shall from time to time report to the supervisors and inspectors of their districts respectively in writing their decisions on all applications for such licenses, or proceedings for the revocation thereof, and all testimony received by them in such proceedings.

Seventh. The inspectors shall license and classify all engineers and pilots carrying passengers.

Eighth. Whenever any person, claiming to be qualified to perform the duty of engineer upon steamers carrying passengers, shall apply for a certificate, the Board of Inspectors shall examine the applicant, and the proofs which he produces in support of his claim; and if, upon full consideration, they are satisfied that his character, habits of life, knowledge, and experience in the duties of an engineer are all such as to authorize the belief that the applicant is a suitable and safe person to be intrusted with the powers and duties of such a station, they shall give him a certificate to that effect, for one year, signed by them, in which certificate they shall state the time of the examination, and shall assign the appointee to the appropriate class of engineers.

Ninth. Whenever any person claiming to be a skilful pilot for any such vessel shall offer himself for a license, the said board shall make diligent enquiry as to his character and merits; and if satisfied that he possesses the requisite skill, and is trustworthy and faithful, they shall give him a certificate to that effect, licensing him for one year to be a pilot of any such vessels within the limits prescribed in the certificate; but the license of any such engineer or pilot may be revoked upon proof of negligence, unskilfulness or inattention to the duties of the station: *Provided, however,* if in cases of refusal to license engineers or pilots, and in cases of the revocation of any license by the local Board of Inspectors, any engineer or pilot deeming himself wronged by such refusal or revocation, may, within thirty days after notice thereof, on application to a supervising inspector, have his case examined anew by such supervising inspector, upon producing a certified copy of the reasons assigned by the local board for their doings in the premises, and such supervising inspector may revoke the decision of such local Board of Inspectors and license such pilot or engineer; and like proceedings, upon the same conditions, may be had by the master or owner of any such vessel, or of any steamboat boiler, for which the said local board shall have refused, upon inspection, to give a certificate of approval, or shall have notified such master or owner of any repairs necessary after such certificate has been granted.

Tenth. It shall be unlawful for any person to employ, or any person to serve as engineer or pilot, who is not licensed by the inspectors; and any one, so offending, shall forfeit one hundred dollars for each offence: *Provided, however*, that if a vessel leaves her port with a complement of engineers and pilots, and on her voyage is deprived of their services, or the services of any of them, without the consent, fault or collusion of the master, owner, or any one interested in the vessel, the deficiency may be temporarily supplied until others, licensed, can be obtained.

Eleventh. In addition to the annual inspection, it shall be the duty of said board to examine seasonable steamers arriving and departing, so often as to enable them to detect any neglect to comply with the requirements of law and also any defects or imperfections becoming apparent after the inspection aforesaid, and tending to render the navigation of the vessel unsafe, which service may be performed by one of the board; and if he shall discover an omission to comply with the law, or that repairs have become necessary to make the vessel safe, he shall at once notify the master, stating in the notice what is required; and if the master deems the requirement unreasonable or unnecessary, he may take the opinion of the board thereon, and if dissatisfied with the decision of such board, may apply for a reexamination of the case to the supervising inspector as is hereinbefore provided; and if he shall refuse or neglect to comply with the requirement of the local board, and shall, contrary thereto, and while the same remains unreversed by the supervising inspector, employ the vessel by navigating her, the master and owner shall be liable for any damage to the passengers and their baggage which shall occur from any defects so as aforesaid stated in said notice, which shall be in writing; and all inspections and orders shall be promptly made by the inspectors; and where it can be safely done in their judgment, they shall permit repairs to be made where those interested can most conveniently do them; and no inspectors of one district shall modify or annul the doings of the inspectors of another district, in regard to repairs, unless there is a change in the state of things demanding more repairs than were thought necessary when the order was made; nor shall the inspectors of one district appoint a person coming from another, if such person has been rejected for unfitness or want of qualifications.

Twelfth. The said board, when thereto requested, shall inspect steamers belonging to districts where no such board is established; and if a certificate of approval is not granted, no other inspection shall be made by the same or any other board, until the objections made by the inspectors are removed; and if any vessel shall be navigated after a board of inspectors have refused to make the collector a certificate of approval, she shall be liable to the same penalties as if she had been run without a license: *Provided, however,* That nothing herein contained shall impair the right of the inspectors to permit such vessel to go to another port for repairs, if, in their opinion, it is safe so to do.

Thirteenth. The said board of inspectors shall have power to summon before them witnesses and to compel their attendance by the same process as in courts of law; and after reasonable time given to the alleged delinquent of the time and place of investigation to examine said witnesses under oath, touching the performance of their duties by engineers and pilots of any such vessel; and if it shall appear satisfactorily that any such engineer or pilot is incompetent, or that life has been placed in peril by reason of such incompetency, or by negligence or misconduct on the part of any such person, the board shall immediately suspend or revoke his license and report their doings to the chief officer of the customs; and the said chief officer of the customs shall pay out of the revenues herein provided, such sums to any witness so summoned under tbe provisions of this act, for his actual travel and attendance as shall be officially certified by an inspector hearing the case, upon the back of the summons, not exceeding the rates allowed to a witness for travel and attendance in the circuit and district courts of the United States.

Fourteenth. That the said board shall report promptly all their doings to the chief officer of the customs, as well as all omissions or refusals to comply with the provisions of law on the part of any owner or master of any such vessel propelled in whole or in part by steam carrying passengers.

Fifteenth. That it shall at all times be the duty of all engineers and pilots licensed under this act, and all mates, to assist the inspectors in the examination of any such vessel to which any such engineer, mate or pilot belongs, to point out all defects and imperfections in the hull or apparatus for steaming, and also to make known to them, at the earliest opportunity, all accidents occasioning serious injury to the vessel or her equipment, whereby life may be in danger, and in default thereof the license of any such engineer or pilot shall be revoked.

SECTION 10. *And be it further enacted,* That it shall not be lawful to take on board of any steamer a greater number of passengers than is certified by the inspectors in the certificate; and the masters and owners, or either of them, shall be liable, to any person suing for the same, to forfeit the amount of passage money, and ten dollars for each passenger beyond the number allowed. And moreover, in all cases of an express or implied undertaking to transport passengers, or to supply them with food and lodging, from place to place, and suitable provision is not made of a full and adequate supply of good and wholesome food and water, and of suitable lodging for all such passengers, or where barges or other craft impeding the progress are taken in tow, for a distance exceeding five hundred miles, without previous and seasonable notice to such passengers, in all such cases the owners and the vessel shall be liable to refund all the money paid for the passage, and to pay also the damage sustained by such default or delay: *Provided, however,* That if in any such case a satisfactory bond is given to the marshal for the benefit of the plaintiff, to secure the satisfaction of such judgment as he may recover, the vessel shall be released.

SECTION 11. *And be it further enacted,* That if the master of a steamer, or any other person, whether acting under orders or not, shall intentionally load or obstruct, or cause to be loaded or obstructed, in any way or manner, the safety valve or valves of a boiler, or shall employ any other means or device whereby the boiler shall be subjected to a greater pressure than the amount allowed by the certificate of the inspectors, or shall be exposed to a greater pressure, or shall intentionally derange or hinder the operation of any machinery or device employed to denote the state of the water or steam in any boiler, or to give warning of approaching danger, it shall, in any such case, be a misdemeanor, and any and every person concerned therein, directly or indirectly, shall forfeit two hundred dollars, and may, at the discretion of the Court, be in addition thereto imprisoned not exceeding eighteen months.

SECTION 12. *And be it further enacted,* That if at any time there be a deficiency of water in a boiler, by suffering it to fall below three inches above the flue as prescribed in this act, unless the same happens through inevitable accident, the master, if it be by his order, assent, or connivance, and also the engineer, or other person, whose duty it is to keep up the supply, shall be guilty of an offence for which they shall severally be fined one hundred dollars each; and if an explosion or collapse happens in consequence of such deficiency, they, or any of them, may be further punished by imprisonment for a period of not less than six nor more than eighteen months.

SECTION 13. *And be it further enacted,* That hereafter all steam-boilers, made of iron, shall be constructed of plates which have been stamped according to the provisions of this act.

SECTION 14. *And be it further enacted,* That it shall be the duty of such inspectors to ascertain the quality of the material of which the boiler plates of any such boiler so submitted to their inspection are made; and to satisfy themselves by any suitable means, whether the mode of manufacturing has been such as to produce iron equal to good iron made with charcoal, such as, in their judgment, may be used for generating steam-power without hazard to life; and no such boiler shall be approved which is made of unsuitable material, or of which the manufacture is imperfect, or is not, in their opinion, of suitable strength, or whose plates are less than one-fourth of an inch in thickness, for a high pressure boiler of forty-two inches in diameter, and in that proportion of strength according to the maximum of working pressure allowed for high pressure boilers of greater or less diameter, or which is made of any but wrought iron of a quality equal to good iron made with charcoal.

SECTION 15. *And be it further enacted,* That all plates of boiler iron shall be distinctly and permanently stamped in such manner as the Secretary of the Treasury shall prescribe, and, if practicable, in such place or places that the mark shall be left visible after the plates are worked into boilers; with the name of the manufacturer, the quality of the iron, and whether or not hammered, and the place where the same is manufactured.

SECTION 16. *And be it further enacted,* That it shall be unlawful to use in such vessel for generating steam for power a boiler, or steam-pipe connecting the boilers made after the passage of this act, or any iron unless it has been stamped by the manufacturer as herein provided; and if any person shall make for use in any such vessel a boiler of iron not so stamped, intended to generate steam for power, he shall, for any such offence, forfeit five hundred dollars, to be recovered in an action of debt by any person suing for the same; and any person using or causing to be used in any such vessel such a boiler to generate steam for power, shall forfeit a like sum for each offence.

SECTION 17. *And be it further enacted,* That if any person shall counterfeit the marks and stamps required by this act, or shall falsely stamp any boiler iron, and be convicted thereof, he shall be fined not exceeding five hundred dollars and imprisoned not exceeding two years. And if any person or persons shall stamp or mark plates with the name or marks of another, with intent to mislead, deceive, or defraud, such person or persons shall be liable to any one injured thereby, for all damage occasioned by such fraud or deception.

SECTION 18. *And be it further enacted,* That in order to carry this act fully into execution, the President of the United States shall, with the advice of the Senate, appoint nine supervising inspectors, who shall be selected for their knowledge, skill and experience in the uses of steam for navigation, and who are competent judges, not only of the character of vessels but of all parts of the machinery employed in steaming, who shall assemble together, at such places as they may agree upon, once in each year at least, for joint consultation and the establishment of rules and regulations for their own conduct and that of the several boards of inspectors within the districts, and also to assign to each of the said nine inspectors the limits of territory within which he shall perform his duties. And the said supervising inspectors shall each be paid for his services after the rate of fifteen hundred dollars a year, and in addition thereto, his actual reasonable travelling expenses incurred in the necessary performance of his duty when away from the principal port in his district, and certified and sworn to by him under such instructions as shall be given by the Secretary of the Treasury, who is hereby authorized to pay such salaries, and also such travelling expenses, and the actual reasonable expenses both to them and other inspectors, of transporting from place to place the instruments used in inspections, which expenses shall be proved to his satisfaction.

SECTION 19. *And be it further enacted,* That the supervising inspectors shall watch over all parts of the territory assigned them, shall visit, confer with, and examine into the doings of the several boards of inspectors, and shall, whenever they think expedient, visit such vessels licensed, and examine into their condition, for the purpose of ascertaining whether the provisions of this act have been observed and complied with, both by the board of inspectors and the master and owners, and it shall be the duty of all masters, engineers, and pilots of such vessels, to answer all reasonable enquiries and to give all the information in their power, in regard to any such vessel so visited, and her machinery for steaming, and the manner of managing both.

SECTION 20. *And be it further enacted,* That whenever a supervising inspector ascertains to his satisfaction that the master, engineer, pilot or owners of any such vessel fail to perform their duties according to the provisions of this act, he shall report the facts in writing to the board in the district where the vessel belongs, and, if need be, cause the negligent or offending parties to be prosecuted; and if he has good reason to believe there has been, through negligence or from any other cause, a failure of the board who inspected the vessel to do its duty, he shall report the facts in writing to the Secretary of the Treasury, who shall cause immediate investigation into the truth of the complaint, and if he deem the cause sufficient shall remove the delinquent.

SECTION 21. *And be it further enacted,* That it shall be the duty of such supervising inspectors to see that the said several boards, within their respective collection districts, execute their duties faithfully, promptly, and, as far as possible, uniformly, in all places, by following out the provisions of this act, according to the true intent and meaning thereof; and they shall, as far as practicable, by their established rules, harmonize differences of opinion when they exist in different boards.

SECTION 22. *And be it further enacted,* That the said supervising inspectors shall also visit collection districts in which there are no boards of inspectors, if there be any where steamers are owned or employed, and each one shall have full power to inspect any such steamer or boiler of each in any such district, or in any other district, where, from distance or other cause, it is inconvenient to resort to the local board, and to grant certificates of approval according to the provisions of this act, and to do and perform in such districts all the duties imposed upon boards in the districts where they exist: *Provided,* That no supervising or other inspector shall be deemed competent to inspect in any case where he is directly or indirectly personally interested, or is associated in business with any person who is so interested; but in all such cases the duty shall be performed by disinterested inspectors, and inspection made in violation of this rule shall be void and of no effect.

SECTION 23. *And be it further enacted,* That it shall be the duty of each of the collectors or other chief officer of the customs for the districts aforesaid, except San Francisco, to make known without delay, to the collectors of all the said districts, except San Francisco, the names of all persons licensed as engineers or pilots for such vessels, and the names of all persons from whom, upon application, licenses have been withheld, and the names of all whose licenses have been revoked or suspended, and also the names of all such vessels which neglect or refuse to make such repairs as may be ordered under the provisions of this act, and the names of all for which license has been, on application, refused.

SECTION 24. *And be it further enacted,* That it shall be the duty of the collectors or other chief officers of the customs and of the inspectors aforesaid, within the said several districts, to enforce the provisions of law against all steamers arriving and departing; and upon proof that any collector or other chief officer of the customs, or inspector, has negligently or intentionally omitted his duty in this particular, such delinquent shall be removed from office, and shall also be subject to a penalty of one hundred dollars for each offence, to be sued for in an action of debt before any court of competent jurisdiction.

SECTION 25. *And be it further enacted,* That the collector, or other chief officer of the customs, shall retain on file all original certificates of the inspectors required by this act to be delivered to him, and shall give to the master or owner of the vessel therein named, two certified copies thereof, one of which shall be placed by such master or owner in some conspicuous place in the vessel, where it will be most likely to be observed by passengers and others, and there kept at all times; the other shall be retained by such master or owner as evidence of the authority thereby conferred; and if any person shall receive or carry any passenger on board any such steamer not having a certified copy of the certificate of approval as required by this act placed and kept as aforesaid, or who shall receive or carry any gunpowder, oil or turpentine, oil of vitriol, camphene, or other explosive burning fluids, or materials which ignite by friction, as freight on board any steamer carrying passengers, not having a certificate authorizing the same, and a certified copy thereof placed and kept as aforesaid; or who shall stow or carry any of said articles, at a place or in a manner not authorized by such certificate, shall forfeit and pay for each offence one hundred dollars, to be recovered by action of debt in any court of competent jurisdiction.

SECTION 26. *And be it further enacted,* That every inspector who shall wilfully certify falsely touching any such vessel propelled in whole or in part by steam, and carrying passengers, her hull, accommodations, boilers, engines, machinery, or their appurtenances, or any of her equipments, or any matter or thing contained in any certificate signed and sworn to by him, shall, on conviction thereof, be punished by fine not exceeding five hundred dollars, or imprisonment not exceeding six months, or both.

SECTION 27. *And be it further enacted,* That if any such vessel carrying passengers, having a license and certificate, as required by this act, shall be navigated without having her hull, accommodations, boilers, engines, machinery, and their appurtenances, and all equipments, in all things conformable to such certificate, the master or commander by whom she shall be so navigated, having knowledge of such defect, shall be punished by fine not exceeding one hundred dollars, or imprisonment not exceeding two months, or both: *Provided,* That such master or commander shall not be liable for loss or deficiency occasioned by the dangers of navigation, if such loss or deficiency shall be supplied as soon as practicable.

SECTION 28. *And be it further enacted,* That on any such steamers navigating rivers only, when from darkness, fog, or other cause, the pilot on watch shall be of opinion that the navigation is unsafe, or from accident to, or derangement of the machinery of the boat, the engineer on watch shall be of opinion that the further navigation of the vessel is unsafe, the vessel shall be brought to anchor, or moored, as soon as it prudently can be done: *Provided,* That if the person in command shall, after being so admonished, by either of such officers, elect to pursue such voyage, he shall do the same; but in such case both he and the owners of such steamer shall be answerable for all damages which shall arise to the person of any passenger and his baggage from said causes in so pursuing the voyage, and no degree of care or diligence shall in such case be held to justify or excuse the person in command, or said owners.

SECTION 29. *And be it further enacted,* That it shall be the duty of the supervising inspectors to establish such rules and regulations to be observed by all such vessels in passing each other, on rivers only, as they shall from time to time deem necessary for safety on each or all rivers navigated by such vessels, two printed copies of which rules and regulations, signed by said inspectors, shall be furnished to each of such vessels, and shall at all times be kept up in conspicuous places on such vessels. Which rules shall be observed both night and day. Should any pilot, engineer or master of any such vessel, neglect or wilfully refuse to observe the foregoing regulations, any delinquent, so neglecting or refusing, shall be liable to a penalty of thirty dollars, and to all damage done to any passenger in his person or baggage by such neglect or refusal; and no such vessel shall be justified in coming into collision with another if it can be avoided.

SECTION 30. *And be it further enacted,* That whenever damage is sustained by any passenger or his baggage from explosion, fire, collision, or other cause, the master and the owners of such vessel, or either of them, and the vessel, shall be liable to each and every passenger injured to the full amount of damage, if it happens through any neglect to comply with the provisions of law herein prescribed, or through known defects or imperfections of the steaming apparatus or of the hull; and any person sustaining loss or injury through the carelessness, negligence, or wilful misconduct of an engineer or pilot, or their neglect or refusal to obey the provisions of law herein prescribed as to navigating steamers, may sue such engineer or pilot for and recover damages for any such injury caused as aforesaid by any such engineer or pilot.

SECTION 31. *And be it further enacted,* That before issuing the annual license to any such steamer, the collector or other chief officer of the customs for the port or district, shall demand and receive from the owner or owners of the steamer, as a compensation for the inspections and examinations made for the year, the following sums, in addition to the fees for issuing enrolment and licenses, now allowed by law, according to the tonnage of the vessel, to wit: for each vessel of a thousand tons and over, thirty-five dollars; for each of five hundred tons and over, but less than one thousand tons, thirty dollars; and for each under five hundred tons and over one hundred and twenty-five tons, twenty-five dollars; and for each under one hundred and twenty-five tons, twenty dollars, at the time of obtaining registry, and once in each year thereafter, pay according to the rate of tonnage before mentioned, the sum of money herein fixed: And each engineer and pilot licensed as herein provided, shall pay for the first certificate granted by any inspector or inspectors, to such inspector or inspectors the sum of five dollars, and for each subsequent certificate one dollar, to be accounted for and paid over to the collector or other chief officer of the customs, and the sums derived from all the sources above specified shall be quarterly accounted for and paid over to the United States in the same manner as other revenue.

SECTION 32. *And be it further enacted,* That each inspector shall keep an accurate account of every steamer boarded by him during the year, and of all his official acts and doings, which in the form of a report he shall communicate to the collector or other chief officer of the customs on the first of May and November in each year.

SECTION 33. *And be it further enacted,* That the inspectors in the following districts shall each be allowed, annually, the following compensation, to be paid under the direction of the Secretary of the Treasury, in the manner officers of the revenue are paid, to wit:

For the district of Portland, in Maine, three hundred dollars.

For the district of Boston and Charlestown, in Massachusetts, eight hundred dollars.

For the district of New London, in Connecticut, three hundred dollars.

For the district of New York, two thousand dollars.

For the district of Philadelphia, in Pennsylvania, one thousand dollars.

For the district of Baltimore, in Maryland, one thousand dollars.

For the district of Norfolk, in Virginia, three hundred dollars.

For the district of Charleston, in South Carolina, four hundred dollars.

For the district of Savannah, in Georgia, four hundred dollars.

For the district of Mobile, in Alabama, one thousand dollars.

For the district of New Orleans, or in which New Orleans is the port of entry, in Louisiana, two thousand dollars.

For the district of Galveston, in Texas, three hundred dollars.

For the district of St. Louis, in Missouri, fifteen hundred dollars.

For the district of Nashville, in Tennesee, four hundred dollars.

For the district of Louisville, in Kentucky, twelve hundred dollars.

For the district of Cincinnati, Ohio, fifteen hundred dollars.

For the district of Wheeling, Virginia, five hundred dollars.

For the district of Pittsburg, Pennsylvania, fifteen hundred dollars.

For the district of Chicago, Illinois, five hundred dollars.

For the district of Detroit, Michigan, eight hundred dollars.

For the district of Cleveland, Ohio, five hundred dollars.

For the district of Buffalo, New York, twelve hundred dollars.

For the district of Oswego, or of which Oswego is the port of entry, New York, three hundred dollars.

For the district of Vermont, two hundred dollars.

For the district of San Francisco, California, fifteen hundred dollars.

Section 34. *And be it further enacted,* That the Secretary of the Treasury shall provide the inspectors with a suitable number of instruments, of uniform construction, so as to give uniform results to test the strength of boilers.

Section 35. *And be it further enacted,* Thall it shall be the duty of the master of any such steamer to cause to be kept a correct list of all the passengers received and delivered from day to day, noting the places where received and where landed, which record shall be open to the inspection of the inspectors and officers of the customs at all times; and in case of default, through negligence or design, the said master shall forfeit one hundred dollars, which penalty, as well as that for excess of passengers, shall be a lien upon the vessel: *Provided, however,* A bond may, as provided for in other cases, be given to secure the satisfaction of the judgment.

Section 36. *And be it further enacted,* That every master or commander of any such steamer, shall keep on board such steamer at least two copies of this act, to be furnished to him by the Secretary of the Treasury; and if the master or commander neglects or refuses so to do, or shall unreasonably refuse to exhibit a copy of the same to any passenger who shall ask it, he shall forfeit twenty dollars.

Section 37. *And be it further enacted,* That any inspector who shall, upon any pretence, receive any fee or reward for services rendered under this act, except what is herein allowed to him, shall forfeit his office; and if found guilty, on indictment, be otherwise punished, according to the aggravation of the offence, by fine not exceeding five hundred dollars or imprisonment not exceeding six months, or both.

Section 38. *And be it further enacted,* That all engineers and pilots of any such vessel shall, before entering upon their duties, make solemn oath before one of the inspectors herein provided for, to be recorded with the certificate, that he will faithfully and honestly, according to his best skill and judgment, perform all the duties required of him by this act, without concealment or reservation; and if any such engineer, pilot, or any witness summoned under this act as a witness, shall, when under examination, on oath, knowingly and intentionally falsify the truth, such person shall be deemed guilty of perjury, and if convicted be punished accordingly.

SECTION 39. *And be it further enacted,* That the supervising inspectors appointed under the provisions of this act, shall, within their respective districts, under the direction of the Secretary of the Treasury, take the examination, or receive the statements in writing, of persons of practical knowledge and experience in the navigation of steam vessels, the construction and use of boilers, engines, machinery and equipments, touching the form, material and construction of engines and their appurtenances; the causes of the explosion of boilers and collapse of flues and the means of prevention; the kind and description of safety-valves, water and steam-gauges or indicators; equipments for the extinguishment of fires, and for the preservation of life in case of accident on board vessels propelled in whole or in part by steam; the advantages and disadvantages of the different descriptions of boilers, engines and their appurtenances, safety-valves, water and steam-gauges or indicators, equipments for the prevention or extinguishment of fires, and the preservation of life in case of accident, in use on board such vessels; whether any, and what further legislation is necessary or proper for the better security of the lives of persons on board such steam vessels; which examination and statements so taken and received shall be transmitted to the Secretary of the Treasury, at such time as he shall prescribe.

SECTION 40. *And be it further enacted,* That it shall be the duty of the Secretary of the Treasury, to cause such interrogatories to be prepared and published as in his opinion may be proper to elicit the information contemplated by the preceding section, and upon the receipt of the examination and statements taken by the inspectors, shall report the same to Congress, together with the recommendation of such further provisions as he may deem proper to be made for the better security of the lives of persons on board steam-vessels.

SECTION 41. *And be it further enacted,* That all penalties imposed by this act may be recovered in an action of debt by any person who will sue therefor, in any court of the United States.

SECTION 42. *And be it further enacted,* That this act shall not apply to public vessels of the United States or vessels of other countries, nor to steamers used as ferry boats, tug-boats, towing-boats, or for navigating canals.

SECTION 43. *And be it further enacted,* That all such parts of this act as authorizes the appointment and qualification of inspectors, and the licensing of engineers and pilots upon the passage thereof, and that all other parts of this act shall go into effect at the times and places as follows: in the districts of New Orleans, St. Louis, Louisville, Cincinnati, Wheeling, Pittsburgh, Nashville, Mobile and Galveston, on the first day of January next, and in all other districts on the first day of March next.

SECTION 44. *And be it further enacted,* That all parts of laws heretofore made, which are suspended by or are inconsistent with this act, are hereby repealed.

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JAN 4 '55